

Acc. Nr: **AP0044593**

Ref. Code: **URO497**

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PRIMARY SOURCE: *Klinicheskaya Meditsina*, 1970, Vol 48,
Nr 1, pp 17-21

THE PRIMARY RESULTS OF CONTINUOUS (ANNUAL) BICILLIN-ASPIRIN
PROPHYLAXIS OF RHEUMATISM RELAPSES IN ADULTS

I. N. Mikhailova, M. A. Mrazkova, T. A. Tarasenkova,
N. V. Nikol'skaya, V. S. Panomarev

Summary

The authors commit to paper the results of continuous 2 1/2-year-long bicillin-aspirin prophylaxis of rheumatism relapses in 180 patients who have sustained the active stage of the process. The patients were subject to intramuscular injections of the new Soviet-made antibiotic bicillin in a dose of 1,500,000 Units (110 cases) or of the Czechoslovakian antibiotic pendepon in a dose of 1,00,000 Units (70 cases) once every four weeks. In spring and autumn the patients were given per os 2 gm of aspirin daily for a period of one month. In regular prophylaxis the number of rheumatism relapses decreased by 10 times, with a sharp reduction of the incidence of tonsillitis, influenza and upper respiratory catarrh. There was noted a normalization of the streptolysin-O titer and a significant decline of laboratory indices of the rheumatic process activity in patients affected with a continuous-recurrent form of the disease.

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REEL/FRA
19771269

Feb. 82

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UDC: 621.396.69:621.319.4

ANDREYEVA, N. A., ZHUKOVSKIY, V. I., MIKHAYLOVA, I. P.

"Effect of Technological Design Factors on the Stability of the Capacitance of Condensers Made From Materials Based on the $BaTiO_3$ - $Bi_4Ti_3O_{12}$ System"

Elektron. tekhnika. Nauchno-tekhn. sb. Radiodetali (Electronic Technology. Scientific and Technical Collection. Radio Components), 1970, vyp. 1 (18), pp 15-19 (from RZh-Radiotekhnika, No 12, Dec 70, Abstract No 12V353)

Translation: Data are given which show that monolithic capacitors made from materials based on the system $BaTiO_3$ - $Bi_4Ti_3O_{12}$ differ with respect to capacitance stability from disc and plate capacitors made from these same materials. In monolithic capacitors, the degree of difference increases with a reduction in dielectric thickness. It is shown that the basic cause for the observed changes in capacitance stability is the effect of the platinum black used for forming the electrodes of the monolithic capacitors. Bibliography of 5 titles. Ye. M.

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UDC: 621.396.69:621.319.4

IVANOVA, M. P., MIKHAYLOVA, I. P., PLAVNIK, Z. S.

"Effect of Electrode Metal on the Properties of Monolithic Ceramic Capacitors"

Elektron. tekhnika. Nauchno-tekhn. sb. Radiodetali (Electronic Technology. Scientific and Technical Collection. Radio Components), 1970, vyp. 1 (18), pp 3-13 (from RZh-Radiotekhnika, No 12, Dec 70, Abstract No 12V350)

Translation: Data are given on the technological singularities of electrical properties and the structure of the dielectric of blanks for monolithic ceramic capacitors with silver-doped palladium and platinum electrodes. Bibliography of 4 titles. Ye. M.

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- 118 -

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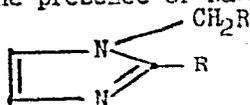
UDC 547.7(3).1.4:542.944.7

KOCHERGIN, P. M., KLYKOV, M. A., and MIKHAYLOVA, I. S., All-Union Scientific Research Chemico-Pharmaceutical Institute imeni S. Ordzhonikidze, Moscow

"Studies in the Imidazole Series. LXXVI. Catalytic Dechlorination of Chloro Derivatives of Imidazole."

Riga, Khimiya Geterotsiklicheskikh Soyedineniy, No 6, Jun 72, pp 820-822

Abstract: 5-Chloroimidazole and 1,2-disubstituted 5-chloroimidazoles were subjected to catalytic hydrogenation with Raney Ni to eliminate the Cl atom. By carrying out the reaction at 40-100° and an H₂ pressure of 50-100 atm. in the presence of NaOH in alcohol or of Na alkoxide, compounds



with R = H, Me, Et, Pr, Bu, i-Bu were prepared.

Hydrogenation of 1-benzyl-2-phenyl-5-chloroimidazole under the same conditions at elevated temperatures led to the formation of 2-cyclohexylimidazole; to obtain 1-benzyl-2-phenylimidazole, the reaction had to be carried out at a temperature $\leq 20-25^{\circ}$.

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USSR

UDC 595.2

MIKHAYLOVA, K. I., Scientific Research Veterinary Institute

"Salmonella Strains Isolated from Wild Birds in Tadzhikistan"

Dushanbe, Izvestiya Akademii Nauk Tadzhikskoy SSR, Otdeleniye Biologicheskikh Nauk, 4 (41), 1970, pp 94-95

Abstract: Wild birds may function as a reservoir of avian paratyphoid and a source of infection of poultry with this disease. During 1965-67, the carcasses of 145 wild birds caught in the areas of the Dushanbe, Chepturinsk, and Leninabad poultry breeding plants and near the Karibadam Poultry State Farm were examined for the presence of Salmonella. This included the carcasses of 96 lesser turtle doves, 33 mynah birds, 10 sparrows, 5 starlings, and 1 jackdaw. In 4 cases (2.7%) Salmonella causing paratyphoid were isolated from a turtle dove. A culture of *S. suis*, group B, was obtained from a sparrow and one of *S. pullorum*, group D, from a mynah bird, while the carcass of another mynah bird contained Salmonella of a nonagglutinating strain.

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UDC 582.285.22:576.8.093

USSR

MIKHAYLOVA, L. A., KVITKO, K. V. All Union Institute of Plant Growing; Leningrad State University imeni A. A. Zhdanov

"Laboratory Methods of Culturing *Puccinia recondita* f. sp. *tritici* Rob. ex Desm, the Agent of Brown Leaf Rust of Wheat"

Leningrad, Mikologiya i Fitopatologiya, No 3, 1970, pp 269-273

Abstract: A detailed description is given of several laboratory methods suitable for: (i) growing *Puccinia recondita* under nonsterile conditions, (ii) testing large numbers of clones to detect mutants and study the lethal effect of mutagens on the spores, (iii) differentiating races, (iv) testing grain varieties for resistance to various rust races, and (v) culturing the fungus under sterile conditions. All these methods preserved the genetic purity of the parasite, something that cannot be easily achieved in a greenhouse.

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USSR

UDC 577.1:615.7/9

CHAPLYGINA, Z. A., THEODOROVICH, V. P., SEDOVA, L. A.,
TKHORZHEVSKAYA, E. S., MIRGAYLOVA, L. G.

"Investigation of the Properties of Certain Synthetic Polymers
and Copolymers to Determine Their Physiological Activity"

Rica, V sb. Fiziol. i opticheski aktivn. polimern. veshchestva
(Physiologically and Optically Active Polymer Substances--
collection of works), "Zinane," 1971, pp 82-88 (from Rzh-
Biologicheskaya Zhurniya, No 21, Nov 71, Abstract No 21F2139)

Abstract: The authors investigated certain biological properties
of polyvinyl alcohol (I), polyvinyl-pyrrolidone (II), and also
copolymers of vinylpyrrolidone with crotonaldehyde (III) with
various degrees of substitution. It is shown that solutions of
low-molecular I and II (molecular weight 10,000 and 12,000) and
also III with a 5 percent degree of substitution are not toxic for
mice. The toxicity of III increases when the degree of substitu-
tion is raised to 25 percent. Data are given on the concentration
of I and II with different molecular weights in the blood. The
main path of elimination is through the kidneys; an insignificant
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APLYGINA, E. A., et al, V sb. Fiziol. i opticheski aktivn. olimern. veshchestva, "Zinatne," 1971, pp 82-88

amount penetrates into the tissues. Compound (I) actuates the reticulo-endothelial system on the tenth day after injection, and III throughout the entire period of the observations (3 hours to 20 days). It is shown that the polymers have a detoxifying effect which is associated in the opinion of the authors with the presence of aldehyde groups.

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USSR

UDC 548.55 : 612.373.8 ²

BUBNOV, M. M., BUZHINSKIY, I. M., DIANOV, Ye. M., MAMONOV, S. K., MIKHAYLOVA, L. I., and PROKHOROV, A. M., Academician, Physics Institute Imeni P. N. Lebedev, Academy of Sciences USSR, Moscow

"Change in the Sign of the Thermal Lens of Glass Laser Rods With a Change in the Glass Thermo-optical Constant"

Moscow, Doklady Akademii Nauk SSSR, Vol 205, No 3, 1972, pp 556-559

Abstract: The article describes results of a study of glasses with both positive and negative, constant thermo-optical values. The focal distances of the thermal lens which forms during periodical laser rod pumping were measured by the autocollimation method. It was found that the thermal lens power decreases, as the thermo-optical constant decreases, and changes sign at some constant thermo-optical values. This correlation between lens power and the thermo-optical constant of the glass occurs for glasses of various compositions (silicate, boron phosphate, phosphate). The mechanisms leading to lens formation are considered in order to explain this relation.

The authors thank S. I. KURGACHEV for his aid in the experiments.

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- 29 -

Acc. Nr:

AT0050267

Abstracting Service:

CHEMICAL ABST. 5-70

Ref. Code:

4R 0020

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103301q Thermo-optical characteristics of glasses activated by neodymium. Buzhinskij, L. M.; Dianov, E. M.; Mamonov, S. K.; Mikhailova, L. M.; Prokhorov, A. M. (Eliz. Light, im. Lebedeva, Moscow, USSR). Dokl. Akad. Nauk SSSR 1970, 190(3), 558-61 [Phys] (Russ). A new method to measure the thermo-optical const. $H^* = \alpha(n - 1) + \beta r_\lambda$ is given, where α is the coeff. of linear expansion of a glass, n refractive index, and βr_λ the temp. coeff. of n . The measurement was done in the region 10-45° for wavelengths 0.63 and 1.15 μ , by using as a light source Ne-He laser LG-126. The temp. gradient, perpendicular to the light beam in the glass 10 x 60 x 130 mm, was produced by water baths, one of const. temp. at 10° and the other with temp. varying slowly 10-45°. A diaphragm with 2 holes (1 mm cross section) at 7 mm to sep. beams passing the glass through the zones with different temp., was used. By an optical system it was possible to follow the change of the optical path $\Delta P = \Delta N \lambda = L H \Delta T$, where ΔN is the no. of interference fringes shifted after the temp. gradient was formed in the glass.

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L was the length of the rod, λ wavelength of the light used, and ΔT the temp. difference. The values of W and $\beta r \lambda$ were evaluated for a no. of laser glasses. Finally, the values of $\beta r \lambda$ and W were evaluated, at which the distortion of the wave front of the wave passing the glass under the temp. gradient does not take place or is minimal. For W this was in the region $(-10$ to $+10) \times 10^{-7}$ degree. The best glasses studied were those of the types KGSS-3 and LGS-41.

J. Havel
JH

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UDC 548.55:612.373.8

USSR

BUZHINSKIY, I. M., DIANOV, YE. M., MAMONOV, S. K., MIKHAYLOVA, I. K., and PROKHOROV, A. M., Academician, Physics Institute imeni P. N. Lebedev of the Academy of Sciences USSR, Moscow

"Thermo-optical Characteristic of Glasses Activated by Neodymium"

Moscow, Doklady Akademii Nauk SSSR, Vol. 190, No. 3, 21 Jan 70, pp 558-561

Abstract: The problem of the thermal distortion of laser resonators associated with the development of glass lasers with a high energy density is discussed. It is noted that the active elements of neodymium-activated glass lasers have a high optical homogeneity; the change in the refractive index in a transverse cross section of the rod does not exceed $1 \cdot 10^{-7}$ for a 2.5-cm rod. However, this high homogeneity in the glass does not occur during laser operation, due to a temperature gradient developed by nonuniform pumping; this gradient, in turn, leads to a gradient in the index of refraction. A new method is presented for measuring directly the thermo-optical constant W of glasses, and values of W are given for the following neodymium-activated glasses: KGSS-3, KGSS-7, LGS-24-5, LGS-28-2, KGSS-46, LGS-36, and LGS-41. The LG-126 neon-helium laser was used as a source to measure the thermo-optical constants in the temperature interval 10-45°C at wave-

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BUZHINSKIY, I. M., et al, Doklady Akademii Nauk SSSR, Vol. 190, No. 3, 21 Jan 70.
pp 558-561

lengths 0.63 and 1.15 μ . The minimum thermal distortion at this temperature was exhibited by glasses with a thermo-optical constant in the limits $(-10 - +10) \cdot 10^{-7} / ^\circ\text{C}$. Measurements showed that glasses KGSS-3 and LGS-41 satisfy conditions for minimum thermal distortion.

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1/2 024 UNCLASSIFIED PROCESSING DATE--30OCT70
TITLE--HYGIENIC ASSESSMENT OF PUPILS' POSTURE DURING LESSONS -U-
AUTHOR--(02)-MIKHAYLOVA, L.V., SHARSHATKINA, G.A.
COUNTRY OF INFO--USSR
SOURCE--GIGIYENA I SANITARIYA, 1970, NR 6, PP 34-37
DATE PUBLISHED-----70
SUBJECT AREAS--BIOLOGICAL AND MEDICAL SCIENCES
TOPIC TAGS--PEDIATRICS, POSTURE, PUBLIC HEALTH
CONTROL MARKING--NO RESTRICTIONS
DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAME--3001/0918 STEP NO--UR/0240/70/000/006/0034/0037
CIRC ACCESSION NO--AP0126577
UNCLASSIFIED

PROCESSING DATE--30OCT70

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2/2 024

CIRC ACCESSION NO--AP0126577

ABSTRACT/EXTRACT--(U) GP-0-

ABSTRACT. AS THE RESULT OF STUDYING THE EFFECT OF VARIOUS POSTURES ON THE DYNAMICS OF CERTAIN PHYSIOLOGICAL FUNCTIONS IN THE COURSE OF LESSONS AND FATIGUE OF THE PUPILS, THE AUTHORS FOUND THE POSTURE WITH A SLIGHT FORWARD INCLINATION TO BE MOST FAVORABLE. IN THIS POSITION THE CENTRE OF GRAVITY OF THE BODY IS WITHIN THE LIMITS OF SUPPORT, THERE IS NO SIGNIFICANT COMPRESSION OF THE INTERNAL ORGANS AND LARGE VESSELS, THE DISTANCE BETWEEN THE TABLE SURFACE AND THE EYES CORRESPONDS TO THE HYGIENIC RECOMMENDATIONS. BESIDES, THE POSTURE IS QUITE STABLE AND THE RESULTING PHYSIOLOGICAL TREMORS ARE OF A SMALL AMPLITUDE.

FACILITY: INSTITUT GIGIYENY
 DETEY; PODRUCSTKOV MINISTERSTVA ZDRAVOOKHRANENIYA SSSR, MOSKVA.

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UIC: 612.115.38-06:612.014.45

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MIKHAYLOVA, L.V. and BYSHEVSKIY, A.SH., Chair of Biochemistry, Zaporozh'e
Medical Institute

"Depression of the Anticoagulation System Following Prolonged Exposure to
Sound"

Moscow, Byulleten' Eksperimental'noy Biologii i Meditsiny, No 2, 1970, pp
28-32

Abstract: Experiments on rats exposed to sound (94-96 db, 2 kHz, 30 min to
10 days) revealed signs of hypercoagulation (judging by the recalcification
time, heparin tolerance of plasma, prothrombin utilization, prothrombin
time, antithromboplastin activity, etc) within 30 min of exposure. This was
followed by activation of the fibrinolytic system, both with continuation
of the sound and after its cessation. Similar phase shifts were observed
after two days of exposure. The depression of the anticoagulation system
is attributed to its exhaustion resulting from periodic activation in the
course of exposure to sound.

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Acc. Nr: **AP0051910**

Ref. Code: **UR 0219**

PRIMARY SOURCE: Byulleten' Eksperimental'noy Biologii i
Meditsiny, 1970, Vol **69**, Nr **2**, pp **29-32**

POSSIBLE MECHANISM GOVERNING INHIBITION OF THE PHYSIOLOGICAL
ANTICOAGULATION SYSTEM IN A LONG-TERM EFFECT OF SOUND

L. V. Mikhaylov, A. Sh. Bushenskiy
Zaporozhie Medical Institute

Experiments staged on 152 albino rats exposed to the effect of sound (94--96 dB, 2000 cps) for various periods of time (from 30 min. to 10 days) ascertained that 15 minutes after starting application of sound the coagulation potential of the blood progressively increases (which involves diminution of recalcification time, higher plasma tolerance to heparin, rising thromboplastin activity, reduced antithromboplastin and antithrombin II, III and IV activity, inhibition of fibrinogenolysis and fibrinolysis). Subsequently, both after ceasing and with continued application of sound these indices returned to normal and an excess activation of the fibrinolytic system was noted. Analogous phasic changes recurred after 2-days of sound application. The authors suggest considering inhibition of the anticoagulation system, earlier observed by them in long-term application of sound, to be the consequence of its exhaustion occurring due to periodic activation in the course of sound application.

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UDC: 539.184

VYLOV, Ts.; DZHELEPOV, B. S.; IVANOV, R. B.; MIKHAYLOVA, K. A.; SERGEYEV, V. O.

"Relative Intensities of X-Rays of the K-Series of Elements With $Z = 79-88$ "

Moscow, Izvestiya Akademii Nauk SSSR: Seriya Fizicheskaya, Vol 26, No 10, Oct 72, pp 2136-2138

Abstract: The authors measure the relative intensities of x-ray lines of ^{79}Au , ^{80}Hg , ^{81}Tl , ^{82}Pb , ^{84}Po , ^{85}At , ^{86}Rn , ^{87}Fr , and ^{88}Ra . The measurements were made on a gamma-spectrometer with a plane-parallel Ge(Li)-detector. The diameter of the detector was 10 mm, and the thickness of the sensitive region was 6 mm. The input window was made from beryllium with 250- μm thickness. The resolution in the investigated energy region (80 keV) was about 850 keV. The mean weighted values of the ratios $K\alpha_2/K\alpha_1$, $K\beta_1'/K\alpha_1$, and $K\beta_2'/K\alpha_1$ are tabulated. The authors thank L. G. Tsaritsyna and A. V. Mozzhukhin for preparing the sources.

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USSR

MIKHAYLOVA, M. P., NASLEDV, D. N., SLOBODCHIKOV, S. V., KHAMROKULOV, M.,
Physicotechnical Institute izeni A. P. Ioffe, Academy of Sciences of the
USSR

"Heating of Electrons by Light in n-InAs"
Leningrad, Fizika Tverdogo Tela, Vol 15, No 2, Feb 73, pp 390-394

Abstract: The photomagnetic effect and photoconductivity are investigated in degenerate specimens of n-InAs with free carrier concentration of $2 \cdot 10^{16}$ - $8 \cdot 10^{17}$ cm^{-3} in the temperature range of 5-77°K. Evaluations are made of the characteristic times of relaxation of electrons with respect to energy, and the role of the principal mechanisms of energy loss by the heated carriers is analyzed in different temperature intervals. It is shown that the behavior of the photomagnetic effect and photoconductivity in degenerate n-InAs at low temperatures can be satisfactorily explained by the theory of photoelectric effects for the case of electron heating by light under conditions of strong electron-electron interaction. In conclusion, the authors thank I. N. Yassiyevich for her constructive criticism.

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AP 9052903

UR 0289

PRIMARY SOURCE: Izvestiya Sibirskogo Otdeleniya, AN SSSR,
Seriya Khimicheskikh Nauk, Nr 12(162), Nr 5,
pp 42-47

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A. W. Nikolaev,
M. P. Mikhailova, I. I. Yakovlev

ANALYSES OF QUATERNARY EXTRACTION SYSTEMS,
CONTAINING FeCl₃, HCl, H₂O AND n-AMYL OR iso-AMYL ALCOHOL

The paper is concerned with the general configuration of the distribution and separation diagrams of quaternary extraction systems, containing FeCl₃, HCl, H₂O and n-amyl or iso-amyl alcohol. It is supposed that the extractable acids HCl and HFeCl₄ are completely dissociated. Equations are deduced for the dependence of $\frac{D^{FeCl_3}}{D^{HCl}}$, D^{FeCl_4} , D^{HCl} , on water phase composition far from of the region of extractant saturation.

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USSR

UDC 553.44(571.56+571.65)

VOLAROVICH, G. P., MIKHAYLOVA, M. S., and EPSHTEYN, YU. A., Central Scientific Research Institute of Prospecting for Nonferrous, Rare and Noble Metals

"Reconnaissance and Evaluation Criteria for Near-Surface Gold-Ore Deposits"

Moscow, Razvedka i Okhrana Nedr, No 8, Aug 73, pp 1-4

Abstract: The article deals with magmatic, mineralogical, structural, geochemical, and geomorphological criteria for the prospecting and evaluation of near-surface gold-ore deposits associated with young volcanic belts of the eastern regions. It is recommended that a complex of prospecting and evaluation methods are used, including determination of the geologic structure on the basis of the interpretation of large-scale aerial photos, for the study of near-surface gold deposits. 5 references.

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USSR

UDC 620.193.47

MIKHAYLOVA, N. A., ZHUK, N. P., BARTEN'YEVA, I. A., and TURKOVSKAYA, A. V.,
Moscow Institute of Steel and Alloys

"Corrosion Mechanism of Aluminum in Acetic and Formic Acids and Their Mixtures"

Moscow, Zashchita Metallov, Vol 7, No 5, 1971, pp 575-578

Abstract: The corrosion mechanism of aluminum in acetic and formic acids and their mixtures was investigated. Grade A97 aluminum was studied in 43% HCOOH, 50% CH₃COOH and in a ternary mixture: 33% CH₃COOH + 27% HCOOH + 40% H₂O at several temperatures. Electrochemical and corrosion characteristics were examined on aluminum specimens 20 x 20 x 2 mm in size. When the potential of aluminum is shifted from its stationary value toward the positive side, passivation of Al commences quite rapidly, a small passivity region is observed, and, finally, a region of disturbance in the passivated state. Comparison of the flows of aluminum dissolution in the region of potential-independence and for the steady-state potential permits an approximate estimate of the contribution of electrochemical and chemical mechanisms to the total rate of spontaneous corrosion of aluminum. A comparison of the three dissolution situations showed that acetic acid is the mixture component increasing the proportion of metal dissolved by the chemical mechanism. This can be explained in the lower

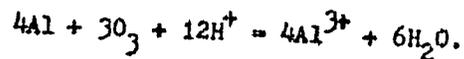
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USSR

MIKHAYLOVA, N. A., et al., Zashchita Metallov, Vol 7, No 5, 1971, pp 575-578

(by one order of magnitude) dissociation constant of acetic acid compared with that of formic acid. When acetic acid is diluted with water, the role of the electrochemical mechanism becomes greater. This can be related to the increased degree of acid dissociation with increased dilution of the acid. The chemical corrosion of aluminum in acetic and formic acids is suggested to be due to the interaction of metal with ambient oxygen and is not accompanied by the evolution of hydrogen:



Accordingly, when the amount of solute oxygen is reduced, the corrosion rate of aluminum decreases and in 50% CH₃COOH saturated with oxygen, air, and nitrogen is 0.300, 0.097, and 0.022 g/m².hour, respectively at 22°.

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USSR

UDC 532.591.001.5

MIKHAYLOVA, N. A., Candidate of Physical and Mathematical Sciences,
REYKHRUDEL', A. E., Engineer

"Experimental Investigation of the Transformation of Single Wave on
Obstacles"

Moscow, Gidrotekhnicheskoye Stroitel'stvo, No 11, November 1970, pp 35-38

Abstract: In the article are presented the results of an experimental laboratory investigation of the interaction of single waves with trapezoidal obstacles having different slopes of the head surface. The purpose of the research was to study the transformation of single waves when approaching the obstacle and when pouring over it. The results may be used for natural conditions in calculating the volume of water pouring over the obstacle and the height of the layer that is pouring over; formulas for provisional calculations are presented. 6 figures, 1 table, 3 bibliographic entries.

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USSR

UDC 547.435 + 577.153.4

KUNDRYUTSKOVA, L. A., MIKHAYLOVA, N. A., SUKHOVA, I. YE.,
BOGATROV, S. V., and CHERKASOVA, YE. M., Moscow Institute of Fine
Chemical Technology imeni M. V. Lomonosov

"Cholinesterase Inhibition by Some Amino Alcohol Esters"

Moscow, Doklady Akademii Nauk SSSR, Vol 196, No 2, 1971, pp 352-355

Abstract: The authors reported for the first time the study of the interaction of amino alcohol benzoates $C_6H_5COOC(Ar)(R)(CH_2)_nNH_2$ and a number of their analogs with butyryl cholinesterase (I.U.B. 3.1.1.8) (ChE). It was found as a result of preliminary experiments, that the character of the interaction of these substances with ChE depends on the structure of the amino alcohol group on Ar and R. Thus, esters of primary alcohols ($Ar=EtH$) are hydrolyzed by cholinesterase and display inhibitor properties only in concentrations of 10^{-4} - 10^{-3} mol/l, while esters of secondary and tertiary alcohols ($Ar=C_6H_5$, $R=H$, C_2H_5) are not hydrolyzed at all by ChE and manifest inhibitor properties in concentrations of $\sim 10^{-6}$ mol/l. In a number of cases, it was found that the

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KUNDRYUTSKOVA, L. A., et al., Doklady Akademii Nauk SSSR, Vol 196, No 2, 1971, pp 352-355

hydrolysis rate of butyrylcholine (BuCh) in the presence of inhibitors does not depend on the time of their pre-incubation with ChE (1-20 min.), which confirms the reversible inhibition character. A study was then made of the dependence of the reaction rate on the substrate (BuCh) and inhibitor concentration. It was found that the quantity V_0/V_I within the limits of experimental accuracy does not depend on the substrate concentration, which is characteristic of noncompetitive inhibition. It is suggested that effective inhibition requires a combination of reaction centers in one molecule, i.e. the inhibitor must be bifunctional in order to simultaneously be connected with the anion center and suppress deacylation.

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1/2 021 UNCLASSIFIED PROCESSING DATE--30OCT70
TITLE--CHANGES IN THE ORGAN OF VISION IN TUMOURS OF THE ADRENAL MEDULLA
PHEOCHROMOCYTOMAS IN CHILDREN -U-
AUTHOR-(02)-MIKHAYLOVA, N.A., ZHUKOVSKIY, M.A.
COUNTRY OF INFO--USSR
SOURCE--VESTNIK OFTALMOLOGII, 1970, NR 3, PP 16-19
DATE PUBLISHED-----70
SUBJECT AREAS--BIOLOGICAL AND MEDICAL SCIENCES
TOPIC TAGS--ADRENAL GLAND, MEDULLA, PEDIATRICS, HYPERTENSION, TUMOR, EYE,
VISUAL DEFECT, RETINA
CONTROL MARKING--NO RESTRICTIONS
DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAE--3003/0126 STEP NO--UR/0357/70/000/003/0616/0019
CIRC ACCESSION NO--AP0129382
UNCLASSIFIED

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UNCLASSIFIED

PROCESSING DATE--30OCT70

CIRC ACCESSION NO--AP0129382

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THE HYPERTENSIVE SYNDROME COMMON TO PHEOCHROMOCYTOMA DETERMINES THE NATURE OF CLINICAL MANIFESTATIONS OF OCULAR PATHOLOGY IN THE RETINA AND VESSELS, AND THIS OFTEN RESULTS IN THE DECLINE OF VISUAL FUNCTION, UP TO COMPLETE BLINDNESS. SURGERY PERFORMED IN THE EARLY COURSE OF THE AFFECTION CAN BRING ABOUT COMPLETE RESTORATION OF THE SIGHT WITH THE EYE FUNDUS ASSUMING ITS NORMAL SHAPE. AT LATER DATES, THE VISION MAY CONTINUE TO BE REDUCED OWING TO SECONDARY DEGENERATIVE PHENOMENA DEVELOPING IN THE RETINA. IT IS POSSIBLE THAT PHEOCHROMOCYTOMA IS NOT RECOGNIZED IN GOOD TIME. IN PHEOCHROMOCYTOMA OCULAR SYMPTOMS, HOWEVER, BECOME DEMONSTRABLE PRIMARILY. THE OCULIST SHOULD BE ON THE ALERT AS TO THE POSSIBLE OCCURRENCE OF THE DISEASE AND REFER SUCH PATIENTS FOR A COMPETENT SPECIAL EXAMINATION.

FACILITY: MOSKOVSKIY NAUCHNO-ISSLEDOVATEL'SKIY INSTITUT GLAZNYKH BOLEZNEY IM. GEL'MGOL'TSA, INSTITUT EKSPERIMENTAL'NOY ENDOKRINOLOGII I KHIMII GORMONOV AMN SSSR, MOSKVA.

UNCLASSIFIED

172 022 UNCLASSIFIED PROCESSING DATE--20NOV70
TITLE--DIABETES MELLITUS AND RETINOPATHY -U-
AUTHOR--(C3)-MAZOVETSKIY, A.G., MIKHAYLOVA, N.A., TIRKINA, T.
COUNTRY OF INFO--USSR
SOURCE--SOV MED 33(2): 77-78, 1970
DATE PUBLISHED-----70
SUBJECT AREAS--BIOLOGICAL AND MEDICAL SCIENCES
TOPIC TAGS--DIABETES MELLITUS, RETINA, EYE DISEASE, HYPERTENSION, INSULIN, ATHEROSCLEROSIS
CONTROL MARKING--NO RESTRICTIONS
DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAME--309770515 STEP NO--08/0899770703170127009670098
CIRC ACCESSION NO--AP015410
UNCLASSIFIED

272 022

UNCLASSIFIED

PROCESSING DATE--20NOV70

CIRC ACCESSION NO--AP0135810

ABSTRACT/EXTRACT--(U) GP-C- ABSTRACT. CASE HISTORIES OF 264 PATIENTS WITH DIABETES MELLITUS AND RETINOPATHY OF A DIFFERENT DEGREE OF INTENSITY ARE ANALYZED. A NEW WORKING CLASSIFICATION OF DIABETIC RETINOPATHIES, WHICH TAKES ACCOUNT OF MORPHOLOGICAL AND FUNCTIONAL CHANGES ON THE LEVEL OF THE ORGANS OF VISION, IS OFFERED. DATA ON THE DEGREE OF RETINOPATHY AS A FUNCTION OF THE SEX AND AGE OF THE PATIENTS, THE SEVERITY AND DURATION OF THE AFFECTION, PRECEDING AND CONCOMITANT INFECTIONS, THE DEGREE OF DIABETES CONTROL, COMBINATION OF DIABETIC RETINOPATHY WITH HYPERTENSION AND ATHEROSCLEROSIS AND INSULIN REQUIREMENTS OF THE PATIENTS ARE PRESENTED. FACILITY: INST. EXP. BLOODINCL. CHEM. HORM., ACAD. MED. SCI. USSR, MOSCOW, USSR.

UNCLASSIFIED

1/2 013 UNCLASSIFIED PROCESSING DATE--11SEP
TITLE--CATALYSIS OF THE SYNTHESIS OF NICKEL CARBONYL BY ELECTRONEGATIVE
ELEMENTS -U-
AUTHOR--KIPNIS, A.YA, KULLOVA, N.V., MIKHAYLOVA, N.F. *MA*

COUNTRY OF INFO--USSR

SOURCE--KINET. KATAL. 1970, 11(1), 256-B

DATE PUBLISHED-----70

SUBJECT AREAS--CHEMISTRY

TOPIC TAGS--CATALYSIS, CARBONYL COMPOUND, NICKEL COMPOUND,
ELECTRONEGATIVITY, CATALYST ACTIVITY, SELENIUM, CHEMICAL SYNTHESIS

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAHE--1989/0203

STEP NO--UR/0195/70/011/001/0256/0258

CIRC ACCESSION NO--AP0106859

UNCLASSIFIED

2/2 013

UNCLASSIFIED

PROCESSING DATE--11SEPT

CIRC ACCESSION NO--AP0106859
ABSTRACT/EXTRACT--(U) GP-0-

ABSTRACT. THE RATE OF NI(CO) SUB4 FORMATION FROM NI AND CO INCREASED IN THE PRESENCE OF ELECTRONEG. ELEMENTS LIKE, N, P, AS, S, SE, TE, CL, BF, OR I. IN THE PRESENCE OF SE, THE RATE INCREASED SIMILAR TO 700 TIMES. EFFECT OF ADDITIVES ON THE RATE OF NI(CO) SUB4 FORMATION SHOWS A MAX. WHICH DEPENDS ON THE CONC. AND ELECTRONEGATIVITY OF THE SPECIES. CATALYTIC ACTIVITY OF THESE ELEMENTS IS EXPLAINED BY A DECREASE OF ACTIVATION ENERGY OF THE REACTION DUE TO THE FORMATION OF INTERMEDIATE COMPS. INVOLVING THESE ADDITIVES.

UNCLASSIFIED

1/2 G19 UNCLASSIFIED PROCESSING DATE--20NOV70
TITLE--LOCAL BLOOD CIRCULATION IN ADULT PATIENTS WITH ASEPTIC NECROSIS OF
THE FEMORAL HEAD -U-
AUTHOR-(03)-PIKHAYLOVA, N.H., SEMENOV, V.A., YANDVSKAYA, E.H.

COUNTRY OF INFO--USSR

SOURCE--ENTOPEDIYA, TRAVMATOLOGIIYA I PROTEZIROVANIYE, 1970, NR 5, PP 40-44

DATE PUBLISHED-----70

SUBJECT AREAS--BIOLOGICAL AND MEDICAL SCIENCES

TOPIC TAGS--BONE DISEASE, NECROSIS, DRUG TREATMENT, SODIUM ISOTOPE,
HEMODYNAMICS

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAME--3004/0741

STEP NO--UR/9115/70/000/005/0040/0044

CIRC ACCESSION NO--AP0111336

2/2 019

UNCLASSIFIED

PROCESSING DATE--20NOV70

CIRC ACCESSION NO--A0131336

ABSTRACT/EXTRACT--(U) OF-- ABSTRACT. PATIENTS WITH ASEPTIC NECROSIS OF THE FEMORAL HEAD SHOW MARKED DISTURBANCES OF THE LOCAL CIRCULATION. THE DEGREE OF IMPAIRMENT OF LOCAL TISSUE BLOOD FLOW WAS INVESTIGATED WITH AID OF INTRACASEOUS INJECTION OF MICROAMOUNTS OF SODIUM 24 AND EXTERNAL ACTIVITY COUNT USING A RADIOMETER. CHARACTERISTIC OF PATIENTS WITH ASEPTIC NECROSIS OF THE FEMORAL HEAD WAS A MARKED LENGTHENING OF TIME OF SODIUM 24 EXCRETION INJECTED INTO THE GREATER THICKNESS OF THE DAMAGED JOINT IN THE AMOUNT OF 1-2 MICROCURIES IN COMPARISON WITH THE TIME OF ITS EXCRETION IN NORMAL PERSONS, AND IN COMPARISON WITH THE UNDAMAGED SYMMETRIC JOINT IN THE GIVEN PATIENT. IN PATIENTS WITH BILATERAL INVOLVEMENT, THE SODIUM 24 EXCRETION TIME WAS MORE PROTRACTED ON THE SIDE OF BIGGER DAMAGE/IN COMPARISON WITH THE TIME OF ITS EXCRETION FROM LESS DAMAGED JOINT. PROLONGATION OF THE ISOTOPE EXCRETION TIME IS AN EVIDENCE OF GREATER OR LESSER DISTURBANCE OF LOCAL CIRCULATION, SLOWING DOWN OF THE VENOUS OUTFLOW. THESE DATA CORRELATE WITH DATA OF PHLEBOGRAPHY AND OTHER HEMODYNAMIC INDICES IN PATIENTS WITH ASEPTIC HIP NECROSIS. FACILITY: CENTRAL RADIOLOGICAL INSTITUTE, TRAVMATOLOGII I ORTOPEDI.

UNCLASSIFIED

1/2 022 UNCLASSIFIED PROCESSING DATE--09OCT70
TITLE--EXPERIMENTAL REPLACEMENT OF RENAL ARTERIES WITH FREE ARTERIAL
AUTOGRAFT -U-
AUTHOR--(02)--KOLESOV, V.I., MIKHAYLOVA, N.N.
COUNTRY OF INFO--USSR
SOURCE--EKSPERIMENTAL'NAYA KHIRURGIYA I ANESTEZIOLOGIYA, 1970, NR 2, PP
51-55
DATE PUBLISHED-----70
SUBJECT AREAS--BIOLOGICAL AND MEDICAL SCIENCES
TOPIC TAGS--KIDNEY, BLOOD VESSEL, TISSUE TRANSPLANT, SURGERY
CONTROL MARKING--NO RESTRICTIONS
DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAME--1990/0640 STEP NO--UR/0461/70/000/002/0051/0055
CIRC ACCESSION NO--AP0108851
UNCLASSIFIED

2/2 022

UNCLASSIFIED

PROCESSING DATE--09OCT70

CIRC ACCESSION NO--A0108851

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THE ARTICLE DEPICTS THE TECHNIQUE AND RESULTS OF EXPERIMENTS INVOLVING REPLACEMENT OF RENAL ARTERIES WITH FREE ARTERIAL AUTOGRAFT. IN 15 DOGS THE TRANSPLANTED ARTERY TOOK AND REMAINED PATENT, AND THE KIDNEY FUNCTION WAS COMPLETELY PRESERVED. THE AUTHORS CONSIDER FREE ARTERIAL AUTOPLASTY AS THE BEST METHOD OF REPLACING CHANGED AREAS OF VITAL ARTERIES OF SMALL DIAMETER.
FACILITY: FAKUL'TETSKAYA KHIRURGICHESKAYA KLINIKA AND N-I LABORATORIYA I LENINGRADSKOGO MEDITSINSKOGO INSTITUTA IM. I. I. PAVLOVA.

UNCLASSIFIED

MIKHAYLOVA N.N.

Walden
JRS 5/24/71
02 Feb 73
Dora G. Williams

NUMBERING THE RESIDUAL STRESSES IN WELD JOINTS OF FORGE-WELDED VESSELS BY
HYDROCOMPRESSION

ENG 621.791.032:519.116

Article by Candidate of Engineering Sciences V. I. Polunov and Engineer
N. N. Mikhaylova, Institute Scientific Research Institute of Chemical Machine
Building, Leningrad, and Institute of Chemical Machine Building, Moscow, in 1972, pp 12-201

The necessity of removal or practical redistribution of residual stresses in weld joints of thick-walled vessels, not only under pressure in chemical production, has been associated with reliability of their operation.

The most widely used methods of removing residual stresses in weld joints are thermal (general or local high-temperature treatment) and mechanical, based on layer peeling of the weld joint metal. The method of welding stress removal, based on the interaction of residual and applied stresses [1], is also known. However, the absence of adequate theoretical and experimental data on the given question as well as the difficulties of its accomplishment, especially for weldments of complex shape and a complex stress system, prevents its broad practical application.

The process of residual welding stress interaction with applied external loads cannot be examined by the simple summation of constituent components of stresses in relation to the direction of their action and magnitude. This process has been associated with the physical and mechanical nature of residual welding stresses and the nonuniformity of weld joint properties. There are oriented microstresses in weld joints along with residual macrostresses [2,3]. The microstresses are formed both in the process of metal crystallization and in the process of weld joint deformation upon application of external loads. The oriented microstresses participate jointly with the macro-

USSR

UDC 577.391

MIKHAYLOVA, N. YA., and KOMAR, V. YE., Central Scientific Research Radio-
Radiological Institute, Ministry of Health USSR, Leningrad

"Cytogenetic Damage to Cells of the Regenerating Rat Liver After Whole-Body
Irradiation of the Animals With X-Rays or High-Energy Protons"

Moscow, Radiobiologiya, Vo, 11, No 4, Jul/Aug 71, pp 618-623

Abstract: Rats were subjected to partial hepatectomy and then irradiated with x-rays in a dose of 400 rad or with 645 Mev protons in an equivalent dose. Irradiation was carried out in the periods G₁ (5-5.5 hrs after hepatectomy) and S (23-24 hrs after hepatectomy) of the cell cycle. On x-ray irradiation the sensitivity in the period G₁, as indicated by the number of cells with chromosome aberrations, was higher than in the period S, while on proton irradiation no such distinction between the two periods was observed. The relative biological effectiveness of protons was 1 for the period G₁ and 1.6 with a gradual drop to 1 for the period S.

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Acc. Nr.

AP0055644

Abstracting Service:
CHEMICAL ABST.

6-70 M

Ref. Code
4P0460

- 111878y Stereospecific polymerization of trimethylsilyl methacrylate by butyllithium. Andreu, D. N.; Kraulina, V. N.; Mikhalova, N. V.; Nekrasova, T. I.; Novoselova, A. V.; Smirnova, G. S. (Inst. Vysokomol. Soedin., Leningrad, USSR). *Vysokomol. Soedin., Ser. B* 1970, 12(2), 123-8 (Russ). The polymn. of $H_2C:CM_3CO_2SiMe_3$ (I) in the presence of $BuLi$ gave 90-100% of the corresponding polymer (II), which is extremely hygroscopic and is hydrolyzed by air moisture. Ir and NMR spectroscopy of poly(methacrylic acid) (III), obtained by the mild hydrolysis of II, showed that $\leq 65\%$ of all segments are isotactic. The polymn. of I is recommended as a convenient method for the prepn. of isotactic III. CPJR J

YI

REEL/FRAME
19840946

7 CB

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UDC 547.241

MIKHAYLOVA, O. B., GRAPOV, A. P., and MEL'NIKOV, N. N.

"Phosphorylated Semicarbazides and Thiosemicarbazides"

Leningrad, Zhurnal Obshchey Khimii, Vol 43 (105), No 7, Jul 73, pp 1449-1451

Abstract: Reaction of the hydrazides of O-arylmethylphosphonic and thio-phosphonic acids as well as that of the N,N-diethylamidomethylthiophosphonic acid with alkyl- and arylisocyanates, alkyl- and arylisocyanates was investigated. The products of these reactions are β -phosphorylated semicarbazides and thiosemicarbazides. The phosphonic acid hydrazides react faster with isocyanates than corresponding thiophosphonic acid hydrazides. The structures of all products were confirmed by IR and PMR spectral data.

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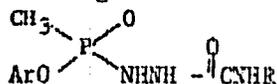
UDC 547.341.26'118,07

MIKHAYLOVA, O. B., MEL'NIKOV, N. N., and GRAPOV, A. F.

"A Method of Making β -Phosphorylated Semicarbazides"

Moscow, Otkrytiya, izobreteniya, promyshlennyye obrabotsy, tovarnyye znaki, No 9, Mar 71, Author's Certificate No 296774, Division C, filed 20 Feb 70, Published 2 Mar 71, p 83

Translation: This Author's Certificate introduces: 1. A method of producing β -phosphorylated semicarbazides of the general formula



where R is an alkyl or aryl, and Ar is an aryl. As a distinguishing feature of the patent, an unsubstituted hydrazide of O-arylmethylphosphonic acid is interacted with alkyl- or arylisocyanate in an organic solvent such as benzene with the application of heat and subsequent isolation of the goal product by conventional methods. 2. A modification of this method distinguished by the fact that heating is done to 60°C.

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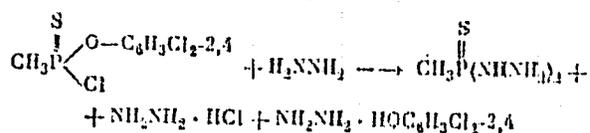
UDC: 547.26'118

MTKHAYLOVA, O. B., GRAPOV, A. F., MEL'NIKOV, N. N., All-Union Scientific
Research Institute of Chemical Agents for Plant Protection.

"Methylthiophosphonic Acid Dihydrazide"

Leningrad, Zhurnal Obshechey Khimii, Vol 42(104), No 6, Jun 72, pp 1420-1421

Abstract: Experimental work was done which showed that hydrazine hydrate acts on 0-2,4-dichlorophenyl methylthiophosphonic acid chloride with hydrazinolysis of both the acid chloride and labile ester bonds to give methylthiophosphonic acid dihydrazide. Treatment of the reaction mixture with excess potassium carbonate isolates the end product.



Methylthiophosphonic acid dihydrazide with benzaldehyde and substituted benzaldehydes gives the corresponding hydrazones.

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USSR

UDC 632.951

GRAPOV, A. F., MEL'NIKOV, N. N., ANDREYEVA, YE. I., RASVODOVSKAYA, L. V.,
PRONCHENKO, T. S., USMANOV, M. T., MEKHAYLOVA, O. B., SKRIPNOVA, K. F., and
ZBARKSIY, F. SH.

USSR Authors' Certificate No 276572, Cl. Aol n 9/36, filed 13 Jan 69,
published 11 Feb 72 (from IZh-Khimiya, No 20, 25 Oct 72, Abstract No 205582
by T. A. Belyayeva)

Translation: In order to widen the assortment of effective fungicides for
controlling cotton wilt, it is suggested that use as systemic fungicides
be made of asymmetric diamides and amidohydrazides of alkylphosphonic and
alkylthiophosphonic acids of the formula $R'R''N(R)P(X)(NH)_nR'''(I)$ (R and R'
= alkyl; R'' = H or alkyl; R''' = unsubstituted or substituted phenyl; n = 1
or 2; X = O or S). I is obtained from amines or hydrazides and alkylphos-
phonic or alkylthiophosphonic acid chlorides. The preparations were tested
under field conditions on naturally infected plants. Experimental results
showed that, as compared with control, I possesses definite systemic activity,
suppressing the development of cotton wilt. Data are presented on tests of
I in comparison with phosbutyl.

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1/2 016 UNCLASSIFIED PROCESSING DATE--09OCT70
TITLE--BEHAVIOR OF CHLORINE IN THE ELECTROLYSIS OF COPPER AND INSOLUBLE
ANODES AND AIR AGITATION OF THE ELECTROLYTE AT HIGH CURRENT DENSITIES
AUTHOR--(05)--BUZHINSKAYA, A.V., MIGINA, A.I., ZHATKINA, Z.F., MIKHAYLOVA,
D.I., BOBROV, A.B.
COUNTRY OF INFO--USSR

SOURCE--ELEKTROKHIMIYA 1970, 6(3), 315-17

DATE PUBLISHED-----70

SUBJECT AREAS--MATERIALS

TOPIC TAGS--COPPER ELECTROLYTIC REFINING, ELECTROLYTE, ELECTRODEPOSITION,
EXTRACTIVE METALLURGY, CHLORINE

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FKAME--1995/1382 STEP NO--UR/0364/70/006/003/0315/0317

CIRC ACCESSION NO--AP0116831

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UNCLASSIFIED

PROCESSING DATE--09OCT70

CIRC ACCESSION NO--AP0116831

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. IN THE ELECTROLYSIS OF A SOLN. CONTG. GU 45-50, H SUB2 SO SUB4 90-100, NISO SUB4 SMALLER THAN OR EQUAL TO 20, AND CL NEGATIVE (AS NACL) 50-500 G-DM PRIME3 AT 50DEGREES, THE ELECTROLYTE WAS AGITATED BY AN AIR FLOW OF 10 L-CM PRIME2 OF INTERELECTRODE CROSS SECTION PER HR. THE RATIO OF CL IN THE ATM. TO THAT IN SOLN. DOES NOT CHANGE WHEN THE C.D. IS INCREASED FROM 1000 TO 2500 A-M PRIME2. A CONCN. OF 0.5-1.5 G FECL SUB3-DM PRIME3 IS SUFFICIENT IN THE HYDROMETALLURGICAL TREATMENT OF CEMENT CU AND SUBSEQUENT ELECTRODEPOSITION OF CU FROM SOLN. FACILITY: GOS. NAUCH. ISSLED. INST. TSVET. METAL., MOSCOW, USSR.

UNCLASSIFIED

1/2 016 UNCLASSIFIED PROCESSING DATE--090CT70
TITLE--BEHAVIOR OF CHLORINE IN THE ELECTROLYSIS OF COPPER AND INSOLUBLE ANODES AND AIR AGITATION OF THE ELECTROLYTE AT HIGH CURRENT DENSITIES
AUTHOR--(05)-BOZHINSKAYA, A.V., MIGINA, A.I., ZHATKINA, T.F., MIKHAYLOVA, O.I., BOBROV, A.B.
COUNTRY OF INFO--USSR

SOURCE--ELEKTROKIMIYA 1970, 6(3), 315-17

DATE PUBLISHED-----70

SUBJECT AREAS--MATERIALS

TOPIC TAGS--COPPER ELECTROLYTIC REFINING, ELECTROLYTE, ELECTRODEPOSITION, EXTRACTIVE METALLURGY, CHLORINE

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAME--1995/1382

STEP NO--UR/0364/70/006/003/0315/0317

CIRC ACCESSION NO--AP0116831

UNCLASSIFIED

2/2 016

UNCLASSIFIED

PROCESSING DATE--09OCT70

CIRC ACCESSION NO--AP0116831

ABSTRACT/EXTRACT--(U) GP-C- ABSTRACT. IN THE ELECTROLYSIS OF A SOLN. CONTG. CU 45-50, H SUB2 SO SUB4 90-100, NISU SUB4 SMALLER THAN OR EQUAL TO 20, AND CL NEGATIVE (AS NACL) 50-500 G-DM PRIME3 AT 50DEGREES, THE ELECTROLYTE WAS AGITATED BY AN AIR FLOW OF 10 L.-CM PRIME2 OF INTERELECTRODE CROSS SECTION PER HR. THE RATIO OF CL IN THE ATM. TO THAT IN SOLN. DOES NOT CHANGE WHEN THE C.D. IS INCREASED FROM 1000 TO 2500 A-M PRIME2. A CONCN. OF 0.5-1.5 G FECL SUB3-DM PRIME3 IS SUFFICIENT IN THE HYDROMETALLURGICAL TREATMENT OF CEMENT CU AND SUBSEQUENT ELECTRODEPOSITION OF CU FROM SOLN. FACILITY: GOS. NAUCH. ISSLED. INST. TSVET. METAL., MOSCOW, USSR.

UNCLASSIFIED

I/2 032 UNCLASSIFIED PROCESSING DATE--13SEP70
TITLE--IONOGRAMS OF PATIENTS WITH RHEUMATISM -U-
AUTHOR--MIKHAYLOVA, S.B. M
COUNTRY OF INFO--USSR
SOURCE--VRACHEBNOYE DELO, 1970, NR 2, PP 71-73
DATE PUBLISHED-----70
SUBJECT AREAS--BIOLOGICAL AND MEDICAL SCIENCES
TOPIC TAGS--POTASSIUM, SODIUM, METABOLISM, RHEUMATIC DISEASE, HEART,
ERYTHROCYTE, ELECTROLYTE, DIAGNOSTIC METHODS
CONTROL MARKING--NO RESTRICTIONS
DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAME--1982/0821 STEP NO--08/0475/70/0007 0027 0071/0073
CIRC ACCESSION NO--AP0052047

272 032

UNCLASSIFIED

PROCESSED BY NSA (S) (U)

CIRC ACCESSION NO--AD0092257

ABSTRACT/EXTRACT--(U) GR-0- ABSTRACT. AN ISOTOGRAPHIC STUDY OF THE POTASSIUM AND SODIUM METABOLISM IS PRESENTED IN 200 PATIENTS WITH RHEUMATIC HEART DISEASES. AN ANALYSIS OF THE LOADINGS REVEALS AN INCREASE OF POTASSIUM AND SODIUM IN THE ERYTHROCYTES IN THE MAJORITY OF PATIENTS. BY THE END OF TREATMENT GENERAL IMPROVEMENT OF THE PATIENT, POSITIVE CHANGES OF CLINICAL LABORATORY DATA WERE ALSO ACCOMPANIED BY A TENDENCY TO NORMALISATION OF THE INITIALLY ABNORMAL ELECTROLYTIC METABOLISM.

UNCLASSIFIED

USSR

UDC 616.981.553-07-616.831.8-008.1-018-073.97

MIKHAYLOVA, S. D., Chair of Pathological Physiology imeni A. A. Bogomolets,
Saratov Medical Institute

"Microelectrophysiological Analysis of the Activity of Cells in the Respiratory Center of the Medulla Oblongata in Botulinus Intoxication"

Moscow, Byulleten' eksperimental'noy biologii i meditsiny, No 8, 1972, pp 16-20

Abstract: This paper is the follow-up of an earlier article by the author and Prof. V. V. Mikhaylov in this (No 1, 1964, p 36), in which it was shown that paralysis of the respiratory muscles in botulinus intoxication arises primarily as the result of depression of the activity of the spinal respiratory motor neurons, while information transmission from the bulbar respiratory centers is maintained. The purpose of the present paper is to study the nature of electrical discharges of the bulbar respiratory center cells in the medulla oblongata at various stages of botulinus intoxication, including the phase of complete cessation of independent respiration. Experiments were performed on cats and rabbits of both sexes. In cats, the paralysis syndrome developed within 15-18 hours after poisoning; in rabbits, the time period was 3-3 1/2 hours. Rhythmic activity of the respiratory neurons and pneumograms were simultaneously reproduced on an H-102 oscillogram. It was found that in both

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MIKHAYLOVA, S. D., Byulleten' eksperimental'noy biologii i meditsiny, No 8,
1972, pp 16-20

animals, with the development of heavy breathing and after full cessation of
external breathing, four types of respiratory neurons could be detected in the
bulbar center: inspiratory, expiratory, with continuous activity, and "boundary."

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- 46 -

USSR

UDC 616.981.553-07:616.833-091.93-003.93

MIKHAYLOV, V. V., MIKHAYLOVA, S. D., and LAZAREVA, K. P., Chair of Pathological Physiology imeni A. A. Bogomolets, Saratov Medical Institute

"The Mechanism of Disrupted Regeneration of Large Myelinated Nerve Fibers in Botulism"

Moscow, Byulleten' Eksperimental'noy Biologii i Meditsiny, Vol 27, No 8, 1971, pp 21-24

Abstract: Experiments performed on healthy frogs (*Rana ridibunda*) and botulinus intoxicated frogs in which the peroneal nerve was severed yielded the following results. In healthy frogs, in the central stump of the sectioned nerve, axoplasm movement is increased but the functional state of the fiber is unchanged on the first day. During subsequent days, axoplasm movement decreases; at the same time, rate of conduction is reduced while the refractory period is lengthened. Removal of the adrenal cortex and pancreas magnifies these changes, while administration of adrenalin or acetylcholine causes no improvement. Administration of botulinus toxin in the later stage of nerve fiber regeneration decreases axoplasm flow even more but exerts no effect on the other two parameters. If the animals are infected with botulinus toxin first and the nerve is sectioned after the toxin has arrested axoplasm movement, this

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USSR

UCC 541.13

MATEROVA, Ye. A. and MIKHAYLOVA, S. S.

"Conductance of Heterogeneous Membranes of Phosphate Cation Exchangers in Different Ionic Forms"

Leningrad, Vestnik Leningradskogo Universiteta, Seriya Fizika i Khimiya, No 1, Feb 71, pp 46-48

Abstract: The article describes results of a study of the conductance of heterogeneous membranes of a KRF brand ion exchanger (5, 8, 12 percent DVB) and zirconyl phosphate (ZrP) in HCl, NaCl, LiCl, MgCl₂ and BaCl₂ solutions in the 0.002-1.0 M concentration range at $(22 \pm 0.1)^\circ \text{C}$. The dependence of the specific conductance of membranes of ZrP and KRF (12 percent DVB) on the external solution concentration was studied. It was found that the specific conductance of ZrP membranes is approximately an order less than the conductance of KRF membranes in all ionic forms. The specific conductance for all the investigated membranes varies as follows: $\text{H} > \text{Na} > \text{Li} > \text{Ba} > \text{Mg}$. Specific conductance increases with an increase in the external solution concentration. The appreciable differences in the conductance of the investigated phosphate membranes in chloride solutions open up possibilities of their use in the electrodialysis of solutions of complex composition.

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- 19 -

Electrochemistry

USSR

UDC 541.13

MATEROVA, YE. A., and MIKHAYLOVA, S. S.

"Study of Phosphate Membranes by the EMF Method in Pure and Mixed HCl-NaCl, HCl-LiCl Solutions"

Leningrad, Vestnik Leningradskogo Universiteta, Seriya Fizika i Khimiya, No 1, Feb 71, pp 43-45

Abstract: The article describes results of a study of heterogeneous membranes of phosphate cation exchangers, brand KRF (5, 6, 12 percent DVB) and zirconyl phosphate (ZrP). The membranes contain 50 percent ion exchanger and polyethylene as binding agent. To study the selective permeability of the membranes measurements were taken of the emf of concentration cells with a membrane in pure and mixed HCl-NaCl, HCl-LiCl solutions. A general expression is given for the emf of a galvanic cell, and specificity constants are estimated. It is shown that the specificity of the investigated membranes decreases in the order $H^+ > Na^+ > Li^+$.

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Acc. Nr.: AP0029821

Ref. Code: UR 0475

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PRIMARY SOURCE: Vrachebnoye Delo, 1970, Nr 1, pp 102-105

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ON THE THERAPEUTIC EFFICIENCY OF ELEUTHEROCOCCUS
Lyubomudrov, V.Ye.; Basamygina, L.Ya.; Bikezina, V.G.;
Mukhina, M.S.; Mikhaylova, T.L.; Osadchuk, V.S.;
Shidlovskiy, Ye.F.; Bondarenko, G.A.; Demkovich, O.A. (Donetsk)

Eleutherococcus improves abnormal pulmonary ventilation, favours normalization of the arterial pressure, positively influences cardiac rhythm and His bundle conduction. It proved rather efficient in the treatment of patients with initial stages of vibration disease. It is promising in the treatment of chronic lead intoxication. The preparation favours more rapid acclimatization of pneumoconiosis involved miners.

It is concluded that eleutherococcus may be recommended for the complex treatment of patients with some professional diseases and more rapid reaclimatization of patients to sanatorium conditions.

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REEL/FRAME

19681507

USSR

UDC 616.314-089.843

MIKHAYLOVA, T. N., Children's Stomatological Polyclinic, Nikolayev

"Experience in Transplanting Teeth With Live Pulp"

Moscow, Stomatologiya, No 1, 1972, p 77

Abstract: The author transplanted a total of 379 teeth with live pulp in 148 children (as many as 9 in some cases) and followed up the results for up to 10 years. During this time only 41 teeth had to be removed because of resorption of the roots, injury, excessive looseness after the operation, and so forth. Normal function was restored in 6 to 8 weeks. X rays revealed that even with substantial defects in the alveolar process, osteogenesis and formation of the periodontal fissure around the transplanted teeth took place in 3 to 4 months. The teeth took best when the pulse was provided with broad access to the surrounding tissues. Failures resulted when an extensive defect was created in bone during the operation. The surviving teeth regained their normal color, sparkle, and sensitivity. Transplantation of teeth with live pulp is indicated in cases where orthodontic treatment is not feasible for one reason or another.

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USSR

UDC 615.21+615.22]547.785.5].012.1

PECHENINA, V. M., MUKHINA, N. A., ABATUROVA, K. A., GRENENSHCHIKOVA, L. P.,
MIKHAYLOVA, T. V., KURILENKO, V. M., and GILEV, A. P., Novokuznetsk Scientific
Chemical-Pharmaceutical Research Institute

"Synthesis and Investigation of Some Benzimidazole Derivatives. V. Esters and
Ethers of 1-Hydroxymethyl- and 1-(2-Hydroxyethyl)-benzimidazoles"

Moscow, Khimiko-Farmatsevticheskiy Zhurnal, Vol 5, No 10, Oct 72, pp 13-15

Abstract: To analkoxide obtained from 0.04 g-atom of metallic Na and corres-
ponding alcohol, 0.02 mole of 1-chloromethylbenzimidazole hydrochloride is added
with stirring, the mixture is left standing for several hours, the precipitate
is removed by filtration, the filtrate is evaporated, and the oily residue is
dissolved in ethanol. Upon addition of an alcoholic acid solution the respective
salts of 1-hydroxymethylbenzimidazole ether is precipitated. To obtain esters
of 1-(2-hydroxyethyl)benzimidazole, a previously described method was used.
The compounds are moderately toxic, affecting slightly the central nervous sys-
tem, lowering rectal temperature, and disturbed coordination in some animals.
Specific physiological effects of select representatives are reported, but no
general trend is noticeable.

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- 16 -

USSR

UDC 51:621.391

BLAZHKEVICH, B. I., VOROBKEVICH, A. Yu., MIKHAYLOVA, Ye. D.

"Use of Logical Algebra Together with the Method of Directed Graphs for Synthesis of Tripolar Subcircuits"

Teor. Elektrotehnika. Resp. Mezhd. Nauchno-tekhn. Sb. [Theory of Electronics, Republic Interdepartmental Scientific and Technical Collection], No 10, 1970, pp 56-68, (Translated from Referativnyy Zhurnal, Kibernetika, No 6, 1971, Abstract No 6 V437).

NO ABSTRACT.

USSR

BLAZHKEVICH, B. I., MIKHAYLOVA, Ye. D., L'vov

"The 'Svitanok' Specialized Mathematical Machine"

Kiev, Otkor i Peredacha Informatsii, No 31, 1972, pp 108-115.

Abstract: A description is presented of the Svitanok mathematical machine, designed to solve systems of linear equations up to tenth order by analyzing the determinants of the matrix and searching for great trees in the graph, the values of elements and arcs of which are written in the form of literal symbols. A block diagram and the method of programming problems to be solved on the machine are presented. A number of combinatorial problems which can be solved on the machine are indicated. Technical data on the machine are presented. The machine is built on the modular principle. The maximum number of points on the first graph of a great tree is ten. The speed of the machine is 10,000 operations per second.

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Computers: Equipment

USSR

UDC 681.32.31

BLAZHKEVICH, B.I., MIKHAYLOVA, Ye.D.

"Device for Finding Elementary Paths in a Directed Graph"

USSR Author's Certificate No. 250547, Filed 12/07/67, Published 4/06/70 (Translated from Referativnyy Zhurnal Avtomatika, Telemekhanika i Vychislitel'naya Tekhnika, No. 4, 1971, Abstract No. 4B 599P).

Translation: The device suggested is designed for automatic solution of one of the primary topological problems -- the search for elementary paths in a directed graph with fixed beginning and end of paths. A number of practically important problems in the area of network planning, transport, queuing, etc. can be reduced to this topological problem. The problem is encountered in analysis of linear electric circuits by topological methods as well. A well-known device which searches for elementary paths in directed graphs contains computation switches; ballast resistors; AND and NOT logic circuits; a power supply; a counting pulse generator; a ones pulse generator; a stepping switch; controlled switches corresponding to arcs of the graphs not ending at the origin and not starting from the beginning of the paths, with "on" indicators and flip-flops

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USSR

UDC 681.32.31

BLAZHKEVICH, B.I.. MIKHAYLOVA, Ye.D., USSR Author's Certificate No. 250547,
Filed 12/07/67, Published 4/06/70.

controlling those switches corresponding to the points of the graphs which are neither the beginning nor the end of a path; and buffer flip-flops. The control flip-flops corresponding to the lines of the graph entering one point and the buffer flip-flop corresponding to this same point are connected to circular commutators, the first of which is connected to the output of the first logic AND circuit, while the last is connected to the output of the last flip-flop of the preceding commutator. The device also contains a search and flip-flop, the input of which is connected to the output of the last flip-flop in the last circular commutator, while the output is connected to an individual input of the first logic AND circuit; a distributor, consisting of vertical busses corresponding to the individual points of the graph, with each bus connected through a ballast resistor to the ungrounded terminal of the power supply, and through a commutation switch with normally open contacts to the grounded terminals of the power supply; pairs of horizontal busses, the working vertical and horizontal busses corresponding to the same point on the graph being connected together. The device suggested differs from the known device as follows: It also contains exclusive NOR logic

2/4

- 12 -

USSR

UDC 681.32.31

BLAZHKEVICH, B.I., MIKHAYLOVA, Ya.D., USSR Author's Certificate No. 250547,
Filed 12/07/67, Published 4/06/70.

circuits corresponding to the individual points of the graph, the inputs of which are connected to the vertical busses of the distributor corresponding to these same points, while the outputs are connected to the individual inputs of a second logic AND circuit, the output of this circuit being connected through a logic NOT circuit to one input of a third logic AND circuit, the second input of which is connected to the output of the counting pulse generator, while the output is connected to a nonmoving contact of the stepping switch; a second nonmoving contact of this switch is connected to the output of the ones pulse generator, while moving contact is connected to the second input of the first logic AND circuit. The working vertical bus corresponding to the beginning of the paths and supplementary vertical bus corresponding to the end of the paths are connected through the corresponding commutation switches with closed contacts to the grounded terminal of the power supply. The control switches corresponding to the individual lines of the graph contain two pairs of contacts connecting the pair of vertical busses corresponding to the point of the graph from which the line begins, with the

3/4

USSR

UDC 681 32.31

BLAZHKEVICH. B.I., MIKHAYLOVA. Ye.D., USSR Author's Certificate No. 250547,
Filed 12/07/67, Published 4/06/70.

pair of horizontal busses corresponding to the point of the graph at which the line ends; the second pair of horizontal busses of the distributor is connected to the grounded terminal of the power supply. 8 figs.

4/4

- 13 -

USSR

UDC 576.651:582.288

M
~~MIKHAYLOVA, Ye. K.~~ and GOL'DSHTEYN, L. Ye., Institute of Botany, Academy of Sciences Uzbek SSR

"The Antagonistic Effect of Bacteria Isolated From Soil of Rice Fields on the Agent of Verticillium Wilt of Cotton"

Tashkent, Uzbekskiy Biologicheskiy Zhurnal, No 3, 1970, pp 57-58

Abstract: Study of epiphytic microflora in rice fields showed that some of these bacteria exhibited antibiotic and lytic properties toward *Verticillium dahliae* when tested by the grass plot method on Chapek media and wort agar. Of 75 rice-field soil bacteria isolated, 29 have biologically active agents; 11 of these exhibited strong antagonistic properties toward the agent of cotton wilt. More antagonists to *V. dahliae* were from the genus *Bacillus* (five species), and a smaller number from *Bacterium* (three species), *Pseudomonas* (two species), and *Micrococcus* (one species). The strongest antibiotic properties were noted in *Bacterium alcaliaromaticum*, *Pseudomonas pellucidula*, *Bacillus oligonitrophilus*, and *Bacterium sulfureum*. The most promising epiphytic microflora for use in controlling cotton wilt included *Micrococcus cirrhiformis* and *Pseudomonas mycophaga*, which show lytic activity with respect to *V. dahliae*.

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USSR

UDC 612.014.426

MIKHAYLOVA, LUKASHEVA, V. D., SKRIPAL', A. V., MEL'NIKOV, V. P., KOROTKIY, V. P.,
NAYMITSENKO, L. V., Gerontology Section of the Belorussian SSR Academy of
Sciences

"Study of the Effect of Weak Electromagnetic Field Gradients on Man"

Minsk, Doklady Akademii nauk, BSSR, 1972, Vol 16, No 12, pp 1147-1149

Abstract: The gerontology section jointly with the Electronics Laboratory of the Academy of Sciences Belorussian SSR has begun studies of the effect of weak electromagnetic field gradients on the functional activity of a number of systems of the organism of man and various animals. To detect the reaction of man and animals to weak electromagnetic fields, pulses of exponential shape were used with a frequency corresponding to the rhythms of the physiological processes characterizing the functional state of the organism ($f = 0.5-30$ hertz) and a frequency of 200-400 hertz corresponding to the rhythms of the excited receptors. The goal was to detect the reaction to the weak electromagnetic field gradients not only of the coherent electromagnetic radiation but also energy gradients of the interference type, white noise, which was created in the 50 hertz to 6 megahertz band. Electroencephalograms, electrocardiograms, phonocardiograms, rheovasograms, plethysmograms and recordings of the arterial pressure and respiration were taken. Electromagnetic energy

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- 12 -

- USSR

MIKHAYLOVA-LUKASHEVA, V. D., Doklady Akademii nauk, BSSR, 1972, Vol 16, No 12, pp 1147-1149

gradients from 0 to $27 \cdot 10^{-24}$ joules were created. The experimental setup and means of calculating the gradients are described in detail in this paper and the variations in the physiological functions will be discussed in later reports.

2/2

Gerontology

USSR

UDC 612.82.3:612.87

MIKHAYLOVA-LUKASEVYA, V. D., DUTKO, G. I., LEBSHEVA, A. I., PUSKAROVICH, A. A.,
AND SYSTOKIN, V. A., Sector of Gerontology, Academy of Sciences Belorussian
SSR, Minsk

"Peculiarities of the Functional Activity of the Central Nervous System in the
Aging Process"

Minsk, Izvestiya Akademii Nauk BSSR, Seriya Biologicheskikh Nauk, No 6, 1972,
pp 87-92

Translation of Russian Abstract: The relation between the changes in the
higher sections of the nervous system and the functional activities of other ner-
vous systems in an organism during aging were studied in experiments in animals
of various age and in man. The experimental results revealed that both the
transportability of nervous processes and the intensity of active inhibition
were decreased and that the functional activity of many of the systems of an
organism and their reactivity to pharmacologic substances administered were
changed in the aging process. The variation in reactivity of old and young
animals to pharmacologic substances is caused by age changes in neurohumoral
regulations. The changes in cerebral cortex during aging are functional,
biochemical, and morphological, and they lead to transformation of subordinated
cortical-subcortical interrelations and of integrated mechanisms, which in
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USSR

MIKHAYLOVA- LUKASHEVA, V. D., Izvestiya Akademii Nauk BSSR, Seriya Biologicheskikh Nauk, No 6, 1972, pp 87-92

turn leads to a decrease in the central control, to changes in relations between the nervous centers and periphery, and to disturbances in regulation of all systems of the organism. These disturbances in functional systems result in faster wearing out of the organism, i.e., aging.

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- 18 -

USSR

UDC 621.762.001

MIKHAYLOVICH, A.

"Significance of Microstructural Studies in the Development of Modern Metal Ceramic Materials"

Sovrem. probl. poroshk. metallurgii [Modern Problems of Powder Metallurgy -- collection of works], Kiev, Nauk. dumka Press, 1970, pp. 135-141, (Translated from Referativnyy Zhurnal-Metallurgiya, No. 1, 1971, Abstract No.1 G439 by the author).

Translation: Various methods of qualitative and quantitative metallography are described, as applicable to porous solids.

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USSR

UDC: 621.396.6-181.5

SHNEYDER, A. A., MIKHAYLOVICH, D. L.

"Improving the Technology of Making Germanium Integrated Microcircuits"

Elektron. tekhnika. Nauch.-tekhn. sb. Tekhnol. i organiz. proiz-va (Elec-
tronic Technology. Scientific and Technical Collection. Technology and Or-
ganization of Production), 1971, vyp. 2(42), pp 3-8 (from RZh-Radiotekhnika,
No 6, Jun 71, Abstract No 6V268)

Translation: The paper describes the electrochemical technology of making series 102 integrated microcircuits with the use of pyrolytically precipitated silicon dioxide film as a mask for localizing electrochemical deposition of the emitter alloy, and alloying for diffusion of the emitters. Cracking of the emitter alloy in the diffusion process is prevented, and the process of electrochemical precipitation and alloying of electrodes is rigidly localized. The parameters of series 102 integrated microcircuits are stabilized. Resumé.

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- 126 -

USSR

M

UDC 617-001.28-036.12-092.9-085.849.1.015.25-07{:
616.36+616.61}07

MIKHAYLOVICH, S. M., OVDIYENKO, N. I., SEDOV, V. V., LEBEDEVA, G. A., and PARENOV,
Yu. D.

"The Effect of Oxathiol on the Liver and Kidneys in Chronic Radiation Sickness
Induced by the Injection of Polonium²¹⁰"

Moscow, Meditsinskaya Radiologiya, No 4, 1970, pp 43-51

Abstract: A single subcutaneous injection of dogs with 2.5 microcurie/kg of Po²¹⁰ produced chronic radiation sickness accompanied by impairment of liver and especially kidney function, causing death of animals in 9 months. In experimental dogs, daily doses of 50 and 25 mg/kg of oxathiol for a month not only mitigated the liver and kidney disorders, but enabled the animals to survive for the entire 7-year observation period. Oxathiol treatments also reduced the size of the absorbed dose of Po²¹⁰ in the organs. Oxathiol is a complexing agent that accelerates the excretion of polonium from the body by forming stable water-soluble complexes. The free SH groups contained in oxathiol help to restore the radiation-impaired balance of SH groups in the enzyme systems.

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USSR

UDC 546.161:541.183.12

KORNELLI, M. E., OLENOVICH, N. L., ENNAN, A. A., SURANOVA, Z. P., KUSHNIR, A. A., and MIKHAYLOVINA, S. K.

"Sorption of Fluoride Ion on Anionite EDE-10P in the Hydroxyl Form"

Kiev, Ukrainskiy Khimicheskiy Zhurnal, Vol 38, No 11, 1972, pp 1172-1174

Abstract: The sorption of fluorine from solutions of NaF and HF by the anionite EDE-10pi in the hydroxyl form was studied. Resin in the hydroxyl form, air dried, was loaded into a polyethylene column, and sorption was accomplished by passing solutions of NaF and HF at varying rates of filtration. The anionite was then washed, first with distilled water and then with solutions of either NaOH or KOH. The degree of charging of the ionite during sorption from acidic solutions is significantly higher than that from weakly alkaline solutions (NaF). During the washing of the resin with water there appears a quantity of fluorine which cannot completely be attributed to the hydrolysis of the resin. This is brought about by molecular sorption or desorption from the sorted material. The first filtrate fractions during elution with alkali have an acidic reaction, which points to desorption into solution of an acidic bifluoride ion, which in the process of sorption is taken up by the resin. This is 1/2

USSR

KORNELLI, M. E., et al., Ukrainskiy Khimicheskiy Zhurnal, Vol 38, no 11, 1972, pp 1172-1174

2

supported by the bimodality of the elution curve during desorption with alkali, suggesting the presence in the ionite phase of 2 types of ions (F^- and HF_2^-).
By selecting the type of eluent and its concentration in solution during desorption of the fluoride ion from EDE-10pi resin, one can obtain concentrated solutions of metal fluorides. Thus EDE-10P can be used for concentration of fluoride ions in analytical and applied chemistry.

2/2

1/2 023

UNCLASSIFIED

PROCESSING DATE--02OCT70

TITLE--DETERMINING THE ACTIVITY OF SERUM ORNITHINE CARBAMOYLTRANSFERASE

-U-

AUTHOR--MIKHAYLOVSKAYA, L.A.

M

COUNTRY OF INFO--USSR

SOURCE--LAB. DELO 1970, (1) 24-5

DATE PUBLISHED-----70

SUBJECT AREAS--BIOLOGICAL AND MEDICAL SCIENCES

TOPIC TAGS--ENZYME ACTIVITY, AMINO ACID, HYDROLYSIS, DRUG EFFECT, BLOOD SERUM

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAME--1988/1625

STEP NO--UR/9099/70/000/001/0024/0025

CIRC ACCESSION NO--AP0106371

UNCLASSIFIED

2/2 023

UNCLASSIFIED

PROCESSING DATE--02OCT70

CIRC ACCESSION NO--AP0106371

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. REICHARD'S METHOD (1958) WAS MODIFIED BY INTRODUCING CORRECTIONS FOR SPONTANEOUS HYDROLYSIS OF CITRULLINE: INCUBATE 1 ML TEST BLOOD SERUM WITH 1 ML SUBSTRATE SOLN. (350 MG DL CITRULLINE (1) IN 10 ML ARSENATE BUFFER, FINAL PH 7.15) FOR 24 HR AT 37DEGREES, TERMINATE THE REACTION WITH 0.2 ML 4M HCLD SUB4, AND CENTRIFUGATE OFF THE PPT. DET. NH SUB4 PRIME POSITIVE IN 1.1 ML SUPERNATE BY THE CONWAY DIFFUSION TECHNIQUE USING 2 ML CONCD. K SUB2 CO SUB3 SOLN. AND ABSORBING NH SUB3 IN 2 ML 0.01N H SUB2 SO SUB4; AFTER 15-17 HR DET. NH SUB4 PRIME POSITIVE BY THE NESSLER'S METHOD. ENZYMIC ACTIVITY EQUALS $E_{SUBEXP} - MINUS (E_{SUBK1} PLUS (E_{SUBK3} MINUS E_{SUBK2}))$, WHERE E_{SUBEXP} IS THE ABSORBANCE OF THE EXPTL. SAMPLE AND K1, K2, AND K3 THE CONTROLS. IN 35 BLOOD DONORS 20-50 YEARS OF AGE THE RANGE OF ENZYMIC ACTIVITY WAS 0-1.6 GAMMA AMMONIA N-ML SERUM.

UNCLASSIFIED

1/2 011

UNCLASSIFIED

PROCESSING DATE--02OCT70

TITLE--DIAMOND POTENTIAL OF THE EASTERN PART OF THE RUSSIAN PLATFORM -U-

AUTHOR--(03)-GRINSON, A.S., KUKUSHKIN, A.I., MIKHAYLOVSKAYA, L.N.

COUNTRY OF INFO--USSR

SOURCE--IZV. AKAD. NAUK SSSR, SER. GEOL. 1970, (1), 105-13

DATE PUBLISHED-----70

SUBJECT AREAS--EARTH SCIENCES AND OCEANOGRAPHY

TOPIC TAGS--ROCK, DIAMOND, GEOCHEMISTRY

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAME--198B/1278

STEP NO--DR/001E/700000/001/0105/0111

CIRC ACCESSION NO--AP0106059

UNCLASSIFIED

2/2 011

UNCLASSIFIED

PROCESSING DATE--02JCT70

CIRC ACCESSION NO--APO105059

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THE PRIMARY DIAMOND BEARING KIMBERLITELIKE ROCKS IN VOLCANIC EVENTS OF EXPLOSION PIPE TYPES, DIKES, ETC. IN THE EASTERN PART OF THE RUSSIAN PLATFORM, WERE FORMED ONLY DURING THE PLATFORM STAGE OF THE STRUCTURE DEVELOPMENT BY STARTING FROM MIDDLE OR UPPER PROTEROZOIC (RIPHEAN) TIME WHEN THE RIGID CRYST. BASEMENT, CAPABLE OF FRACTURING, WAS ALREADY FORMED. THE DETECTION OF BURIED (HIDDEN) MAGMATIC BODIES OF BASIC AND ULTRABASIC COMPN. IS POSSIBLE BY GEOPHYS. METHODS. THE MAGNETIC ANOMALIES, LOCALIZED TO THE ZONES OF DEEP FRACTURES IN THE PLATFORM BASEMENT, ARE THE MOST PROMISING IN THIS PROSPECT. THE MINERALS, TYPICAL OF BASIC AND ULTRABASIC ROCKS, AND MINERALS, GENETICALLY RELATED TO THE DIAMONDS (PYROPE, CHROME SPINEL, ETC.), WERE FOUND DURING MINERALOGICAL STUDY OF HEAVY FRACTIONS FROM ROCKS OPENED BY DRILL HOLES AND SITUATED IN THE ZONES OF DEEP FRACTURES OF THE BASEMENT. SEVERAL MAGMATIC BODIES OF ALK. BASIC COMPN. WERE FOUND IN THE DIAMOND BEARING KOLVA VISHERA AREA ON THE WESTERN SLOPES OF THE URALS. THIS INDICATES THE POSSIBILITY OF FINDING THERE PRIMARY DIAMOND BEARING ROCKS.

UNCLASSIFIED

USSR

MIKHAYLOVSKAYA, L. V.

"Instabilities of a Collision Plasma of Finite Pressure and Nonuniform Temperature"

Leningrad, Zhurnal Tekhnicheskoy Fiziki; February, 1971; pp 241-7

ABSTRACT: The article concerns a study of the oscillations of a collision plasma of finite pressure and nonuniform temperature. Magnetohydrodynamic equations are used in which the contribution of pressure from not only the magnetic viscosity but also the heat flux is calculated. The region in which the development of instabilities in the plane of the variables $\beta \equiv 16\pi n_0 T_0 / B_0^2$ and $\gamma \equiv \partial \ln T_0 / \partial \ln n_0$ occurs is determined. This region is shown to be multiply connected, which fact testifies to the existence of several types of instability.

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- 55 -

USSR

UDC: 517.949.2

MITROPOL'SKIY, Yu. A. and MIKHAYLOVSKAYA, N. A.

"Periodic Solutions of Discrete Differences in Second-Order Equations"

Kiev, Ukrainskiy Matematicheskiy zhurnal, Vol 24, No 4, 1972, pp 537-541

Abstract: For the first time, to the authors' knowledge, this paper presents an algorithm for finding the periodic solution to a second-order linear difference equation and a proof for a theorem stating the existence of such a solution. The difference equation considered is of the form $\Delta^2 x_n = f_n(x_n, \Delta x_n)$, where $f_n(x_n, \Delta x_n)$ is a function periodic in n with a period of N and is defined for $-\infty < n < \infty$, $a \leq x_n \leq b$, $c \leq \Delta x_n \leq d$, where it is continuous for the combination of variables x_n and Δx_n and satisfies the inequalities

$$|f_n(x, y)| \leq M \text{ and } |f_n(x', y') - f_n(x'', y'')| \leq k_1 |x' - x''| + k_2 |y' - y''|.$$

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1/2 028 UNCLASSIFIED PROCESSING DATE--300CT70
 TITLE--QUANTITATIVE ANALYSIS OF ORGANOMETALLIC COMPOUNDS-
 MICRODETERMINATION OF ARSENIC BY COMBUSTION IN AN OXYGEN FILLED FLASK
 AUTHOR-(03)-SHANINA, T.M., GELMAN, N.F., MIKHAYLOVSKAYA, V.S.
 COUNTRY OF INFO--USSR
 SOURCE--ZH. ANAL. KHIM. 1970, 25(2), 358-61
 DATE PUBLISHED-----70

SUBJECT AREAS--CHEMISTRY
 TOPIC TAGS--QUANTITATIVE ANALYSIS, ARSENIC, ORGANOMETALLIC COMPOUND,
 SPECTROPHOTOMETRIC ANALYSIS, ORGANIC ARSENIC COMPOUND, COMBUSTION

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED
 PROXY REEL/FRAME--1993/0675

STEP NO--UR/0075/70/025/002/0358/0361

ACCESSION NO--AP0113546

UNCLASSIFIED

PROCESSING DATE--30OCT70

2/2 028

CIRC ACCESSION NO--AP0113546

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. A MICROMETHOD WAS DEVELOPED FOR AS
 DETN. IN ORG. AS COMPDS. BY COMBUSTION OF THE SAMPLE IN A FLASK FILLED
 WITH O AND SPECTROPHOTOMETRIC DETN. OF AS AS ITS BLUE MOLYBDOARSENATE
 COMPLEX. HYDRAZINE SULFATE IS USED AS THE REDUCING AGENT. THE
 ABSORBANCE OF THE COMPLEXES IS STABLE IN 0.33-0.56N ACID SOLNS. AND DOES
 NOT DEPEND ON REAGENT CONCNS. THE COLOR IS DEVELOPED 5-10 MIN AFTER
 BOILING ON A WATER BATH. ITS. MAX. ABSORBANCE OCCURS IN THE 850 NM
 RANGE. BEER'S LAW IS OBEYED UP TO 4 MUG AS PER ML. SI AND GE DO NOT
 INTERFERE. COMBUST 3-8 MG OF THE SAMPLE IN A FLASK FILLED WITH O,
 ABSORB THE PRODUCTS IN A MIXT. OF 10 ML N H SUB2 SO SUB4 AND 1.5-2 ML
 0.05N KMNO SUB4. REDUCE THE KMNO SUB4 EXCESS WITH 1PERCENT HYDRAZINE
 SULFATE AND DIL. TO 100 ML WITH H SUB2 O. NEUTRALIZE AN ALIQUOT CONTG.
 5-20 MUG AS WITH A SATD. NA SUB2 CO SUB3 SOLN. BY USING PHENOLPHTHALEIN
 AS INDICATOR, ADD 6 ML 2N H SUB2 SO SUB4, 4 ML 1PERCENT AMMONIUM
 MOLYBDATE IN 2N H SUB2 SO SUB4, AND 2 ML 0.15PERCENT HYDRAZINE SULFATE,
 AND OIL. TO 50 ML WITH H SUB2 O. HEAT FOR 5 MIN, COOL, AND DIL. TO VOL.
 WITH H SUB2 O. DET. THE ABSORBANCE AT 850 NM. THE STD. DEVIATION IS
 0.12PERCENT ABS. FACILITY: INST. HETEROORG. COMPD., MOSCOW,
 USSR.

UNCLASSIFIED

Acc. Nr: **AP0053433** - Abstracting Service:
CHEMICAL ABST.

M/90

Ref. Code:
4/R 0366

110716g Synthesis of acetylenic keto alcohols under Favorskii reaction conditions. Mikhailovskii, D. I.; Rozitskaya, V. N.; Favorskaya, T. A. (Rubezhan. Filial Khark'kov. Politekh. Inst. im. Lenina, Rubezhnoe, USSR). Zh. Org. Khim. 1970, 4(2), 397-8 (Russ). The reaction of $MeCOC:CH$ with acetone in ether soln. contg. anhyd. KOH gave $MeCOC:CC(OH)Me$.
CPJR ↓

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REEL/FRA
19830458

7

UDC 6B1.325.65

USSR

MAKAROV, E. P., MIKHAYLOVSKIY, G. I.

"Algorithms and Programs for Analyzing and Optimizing the Static Characteristics of a Digital-Analog Converter"

Taganrog, Region. nauch.-tekhn. seminar po stat. analizu, modelir. i avtomatiz. kontrolya ob"yektov s konstrukt. slozhn. strukturoy---Sbornik (Regional Scientific and Technical Seminar on Statistical Analysis, Modeling and Automated Monitoring of Objects with a Structurally Complex Design---collection of works), vyp. 6, 1972, pp 50-58 (from RZh-Avtomatika, Telemekhanika i Vychislitel'naya Tekhnika, No 11, Nov 72, abstract No 11B308)

Translation: Algorithms and programs are proposed for studying a digital-analog converter used for shaping reference voltage levels in an analog-digital converter of sequential digital coding without feedback. A mathematical description is formulated for the investigated digital-analog converter. Statistical methods of experimental planning are used to construct an effective algorithm for analyzing the parametric sensitivity of digital-analog converter circuits, and the problem of optimizing the parameters of digital-analog converter circuits is solved by the method of steepest descent. The

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USSR

MAKAROV, E. P., MIKHAYLOVSKIY, G. I., Region. nauch.-tekhn. seminar po stat. analizu, modelir. i avtomatiz. kontrolya ob"yektov s konstrukt. slozhn. strukturoy--sbornik, vyp. 6, 1972, pp 50-58

results of investigation of the mathematical model of the digital-analog converter on the "Ural-2" digital computer are discussed. Three illustrations, bibliography of four titles. L. P.

2/2

" 53 "

USSR

UDC 577.3

KOZLOV, YU. P., and MIKHAYLOVSKIY, G. YE., Moscow State University Imeni M. V. Lomonosov

"Electrochemiluminescence of Carcinogenic Polycyclic Hydrocarbons"

Moscow, Doklady Akademii Nauk SSSR, Vol 193, No 5, 1970, pp 1174-1176

Abstract: The effect of various polycyclic hydrocarbons on the electrochemiluminescence (ECL) of a system consisting of tetraethylammonium bromide and dimethylformamide was studied. All of the polycyclic compounds sensitized the ECL of the system, and the extent of the sensitization correlated well with the carcinogenic activity of the compounds. Since the luminescence was considered to be due to recombination of anion radicals of the hydrocarbons, their lifetime was determined by the EPR method. It was concluded that the lifetime of the anion radicals and the electron acceptor properties of the polycyclic hydrocarbons correlate to a high degree with carcinogenic activity. It is therefore assumed that the anion radical forms of polycyclic hydrocarbons participate in the chemical processes of carcinogenesis.

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BOMBARDMENT -U-
AUTHOR--(02)-DRANOVA, ZH.I., MIKHAYLOVSKIY, I.M. 
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ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. APPLICATION OF FIELD EMISSION MICROSCOPY TO THE INVESTIGATION OF THE STRUCTURE AND TOPOGRAPHY OF ACICULAR TUNGSTEN MICROCRYSTALS BOMBARDED BY HELIUM IONS WITH ENERGIES RANGING FROM 500 TO 2500 EV. SPECIFICALLY STUDIED IS THE NATURE OF THE STRUCTURAL CHANGES OF THE SURFACE DUE TO ION BOMBARDMENT UNDER CONDITIONS WHERE THERMALLY ACTIVATED PROCESSES AND THEIR SURFACE DEFORMING EFFECTS ARE ELIMINATED. THIS MADE IT POSSIBLE TO RELATE THE OBSERVED EFFECTS TO THE PARAMETERS OF THE BOMBARDING ION FLUX AND THE FIELD PARAMETERS AT THE TUNGSTEN SURFACE. IT IS SHOWN THAT THE OBSERVED ACCENTUATION OF ACICULAR EMITTERS AND THE FORMATION OF SURFACE MICROROUGHNESSES UNDER THE EFFECT OF ION BOMBARDMENT IN STRONG ELECTRIC FIELDS CANNOT BE ATTRIBUTED TO CATHODE SPUTTERING ALONE, AND THAT THE BASIC MECHANISM OF THE SURFACE DEFORMATION OBSERVED IS PROBABLY SURFACE MIGRATION IN STRONG ELECTRIC FIELDS, WHICH IS ACTIVATED BY ION BOMBARDMENT AT LOW TEMPERATURES.

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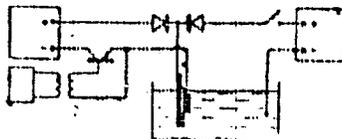
UDC: 621.319.4

MIKHAYLOVSKIY, I. P., Institute of Mathematics, Siberian Department of the Academy of Sciences of the USSR

"A Device for Electric Forming of Thin-Film Capacitors"

Moscow, Otkrytiya, izobreteniya, promyshlennyye obraztsy, tovarnyye znaki, No 6, Feb 71, Author's Certificate No 294187, Division H, filed 24 Nov 69, published 26 Jan 71, p 160

Translation: This Author's Certificate introduces a device for electric forming of thin-film capacitors. The device contains a source of forming voltage and a cutoff switch. As a distinguishing feature of the patent, forming quality is improved by connecting one plate of the capacitor to the anode of an electrochemical cell, and connecting the other plate to the emitter of a transistor connected in series in the forming current circuit. The collector of this transistor is connected to the source of forming voltage, and the base is connected to a controlling voltage source.



1/1

- 49 -

USSR

M UDC 621.317.743:621.317.73

MIKHAYLOVSKIY, L. K.

"Procedure for Frequency-Selective Nonheterodyne Measurement of the Intensity of a Magnetic Field of Superhigh-Frequency Oscillations and the Pulse Power"

Dokl. Nauchno-tekhn. konferentsii po interesam nauchno-issled. rabot za 1968-1969 gg. Mosk. energ. in-t, 1970. Sekts. Radiotekhnicheskaya, Podsekt. ferritovoy SVCh radiofiziki (Reports of the Scientific and Technical Conference on the Results of Scientific Research Work for 1968-1969. Moscow Power Engineering Institute, 1970. Radiotechnical Section. Ferrite Superhigh Frequency Radio Physics Subsection), Moscow, 1969, pp 52-61 (from RZh-Radiotekhnika, No 3, Mar 70, Abstract No JA308)

Translation: The proposed procedure is based on the effect of the occurrence of low-frequency electromagnetic oscillations in the circuit connected to the magnetic semiconductor in the waveguide under the effect of a superhigh-frequency field. These oscillations occur with an intensity of the superhigh-frequency field exceeding a critical value determined by the parameters of the semiconductor and the circuit and also with a certain relation between the frequency of the superhigh-frequency field and the magnitude of the constant magnetizing semi-

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USSR

MIKHAYLOVSKIY, L. K., Dokl. Nauchno-tekhn. konferentsii po intogam nauchno-issled. rabot za 1968-1969 gg. Mosk. energ. in-t, 1970. Sekts. Radiotekhnicheskaya, Podseks. ferritovoy SVCh radiofiziki, Moscow, 1969, pp 52-61

conductor of the field. Three possible mechanisms of the occurrence of low-frequency oscillations are investigated. 1. Effect of generation of low-frequency oscillations in the circuit in a ferrite under the effect of the superhigh-frequency field. 2. Relaxation oscillations in the ferrite occurring independently of the presence of the circuit around the ferrite. 3. Occurrence of acoustic oscillations in the ferrite the frequency of which depends on the magnitude of the superhigh-frequency power. The principles of measurements based on this effect are discussed. The bibliography has seven entries.

2/2

USSR

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UDC 621.517.38

SHAKIRZYANOV, F. N., ANTONETS, YE. P., MIKHAYLOVSKIY, L. K., Moscow "Order of Lenin" Power Engineering Institute"

"A Method of Measuring Microwave Pulse Power"

Moscow, Otkrytiya, Izobreteniya, Promyshlennyye Obrabotky, Tovarnyye Znaki, No 23, 1970, Author's Certificate No 274833, Filed 1 Nov 68, p 225

Abstract: This author's certificate introduces a method of measuring microwave pulse power by means of a magnetic detector placed in the channel of the power to be measured, and located in a fixed magnetic field. As a distinguishing feature of the patent, the level of the microwave pulse signal power to be measured is increased by setting the magnitude of the magnetic field equal to its value in the case of additional resonance in a ferrite specimen. The amplitude or frequency of the low-frequency oscillations generated by the magnetic detector is taken as the measure of the microwave power.

1/1

USSR

UDC: 621.372.826

USIK, V. Ya., ROZHKO, A. V., MIKHAYLOVSKIY, S. A., MARCHENKO, P. I.,
BURLAKOV, O. V., POLISHCHUK, Ya. I.

"A Single-Conductor Transmission Line"

USSR Author's Certificate No 259195, filed 19 Aug 68, published 28 Apr 70
(from RZh-Radiotekhnika, No 12, Dec 70, Abstract No 12H151 F)

Translation: The proposed single-conductor transmission line consists of a section of metal wire with a dielectric coating, two coaxial-horn surface-wave exciters and a tension device of the winch type. To simplify connection of reception and transmitting equipment to the transmission line and ensure tightening of the wire, this wire is seated loosely in a cylindrical hole made through one of the exciters in the central conductor of the branch of the angle connector which is coaxial with the horn. In the tension device, the winding drum is connected to a hand crank through a slip clutch. Five illustrations.

1/1

- 130 -

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Antennas

USSR

UDC 621.372.606:621.373.01.1(1) (1970)

ROZHKO, A. V., MISHAYEVSKIY, S. A.

"A Protective Cover for a Horn Exciter"

USSR Author's Certificate No. 154174, Filed 15 Jul 68, Published 5 Apr 70, from
RZh-Radiotekhnika, No 10, Oct 70, Abstract No 104125 P)

Translation: The proposed protective cover for a horn exciter on a single-conductor transmission line is made in the form of a thin-walled dielectric cone where the incident wave hits the surface at the Brewster angle. To reduce overall dimensions and increase reliability, the cone section has a base radius smaller than the aperture radius of the horn, and equal to 2/3 the aperture radius. At the vertex of the cone is a sleeve whose length is equal to half the length of a wave in the dielectric. One illustration.

Thin Films

USSR

UDC 539.23:538.214

MIKHAYLOVSKIY, S. S., Institute of Physics imeni L. V. Kfrenskiy, Siberian Department of the Academy of Sciences USSR

"Low-Frequency Ferromagnetic Resonance of a Cross-Magnetized Thin Film"

Sverdlovsk, Fizika Metallov i Metallovedeniye, Vol 13, No 5, May 71, pp 913-916

Abstract: Dependences of the frequency of ferromagnetic resonance on the external constant magnetic field applied perpendicularly to the plane of a thin magnetic film, $f_p(H_{\perp})$, and of the width of the absorption line on the frequency $\Delta H_{\perp}(f_p)$ were experimentally investigated on films of 500 - 2000 Å thickness produced by condensation of Permalloy 80% Ni - Fe in vacuum on heated glass bases. It was found that the investigated dependences show an anomalous behavior when $H_{\perp} \rightarrow 4\pi M$, where M = effective magnetization perpendicularly to the plane of the specimen. The investigation results, explained by the rearrangement of the thin magnetization structure in the external magnetic field, are discussed by reference to diagrams showing the ferromagnetic resonance frequencies in dependence on the constant magnetic field for 1000 Å and 960 Å thick specimens and the absorption line width is 1/2

USSR

MIKHAYLOVSKIY, S. S., Fizika Metallov i Metallovedeniye, Vol 31, No 5, May 71, pp 913-916

dependence on the ferromagnetic resonance frequency. The resonance effect of the thin structure on $f_p(H_{\perp})$ on low temperatures is explained. Three illustr., one formula, nine biblio. refs.

2/2

- 59 -

(3)

MIKHAYLOVSKIY V. M.

JPRS 58344

28 February 1973

UDC: 534.618:599.537

THE OPERATING PRINCIPLE OF THE ECHOLLOCATION SYSTEM OF MARINE ANIMALS

Article by V. V. Kaslov, and Corresponding Member of the Academy of Sciences (Ukraine) B. M. Pordubov, Kiev, Donetsk Academic Sci. Center, Kiev, U.S.S.R. *Trudy Akad. Nauk Ukrain. SSR, Seriya Tekhn. Nauki*, No. 11, 1972, pp 107-110.

In recent years many articles have been published on experimental investigations of the locating abilities of marine animals (1-10, etc). In the experiments (diameter) of two bodies (targets) of identical form (cylinders, spheres, etc) made of the same material, and also of distinguishing two bodies of identical form and material dimensions but made of different materials. Various hypotheses have been advanced regarding the operating principle of the echolocation system of marine animals, up to hypothesis of "semi-visibility" and holography (10), but without analysis of the reflected acoustic field, information about which marine animals use for recognition.

For explanation of the observed phenomena the following published experimental data is of real importance:

1. Location signals of the dolphin [1,2] represent a series of broad-band pulses (with a length of 55 microseconds to 7 milliseconds) of various repetition frequencies (from units to hundreds of bursts) and fill-in. It is noted that the character of the change of the pulse repetition frequency (which increases as the dolphin approaches a target), does not depend on the configuration of the target, heterogeneity of the reflector or the geometry of the material. It is emphasized (5,9) that the location pulses contain a large quantity of ultrasonic energy at frequencies above 100 kHz and their frequency spectrum in some cases is above

100 kHz. The frequency band of the signals received by marine animals is rather broad. Thus, for example, investigated (7) dolphins responded with a frequency of 150 kHz, and not more than 10-15 W/cm² in the frequency

2

range of 30-130 kHz. The ability of marine animals to recognize signals according to frequency is characterized by the results of investigation of the common seal [11], which recognized with high precision signals which differed in frequency by 1.5% or more in the frequency range of 1-100 kHz.

It follows from the cited data that the most important frequency range for the vital activity of the dolphin (defense and finding fish for food) is 1-200 kHz, which corresponds to a wavelength $\lambda \approx 1.2$ cm in sea water.

Taking into consideration that frequency range, the velocity of elastic vibrations c and the characteristic dimension of the objects of interest to marine animals, it can be concluded that the working value of the wavelength scale is $\lambda \approx (2\pi R)/c$ lies in the range of several to 100 units.

These data can be used for analysis of the structure of the reflected field by starting from an approximate analytical model of the paraxial interaction of a plane acoustic wave $P_0 \exp(-i(k_0 z - \omega t))$ with the field of a circular cylinder with the radius a , placed in an infinite homogeneous homogeneous liquid. Solutions of similar problems, obtained by means of curvilinear coordinates and integral equations, permit in practice either taking the structure of the diffraction field either in the region $r > a$ or in the region $r < a$. The known [12] solution of a diffraction problem for a isotropic solid circular cylinder by the method of separation of variables is rather unwieldy, as the number of terms of the series which must be taken into consideration in the calculations has the same order of magnitude as the values of ka .

Therefore in the present paper, to obtain very simple calculating formulas, the posed problem has been solved by the operator method proposed by V. F. Luk'ko [13].

Upon impingement on the cylinder a portion of the energy of the elastic vibrations is reflected, forming in the liquid surrounding the cylinder a reflected wave P_1 and the rest of the energy passes through the cylinder, forming in it longitudinal and transverse vibrations characterized respectively by the scalar potential ψ , connected with volume expansion, and the corresponding vector potential \mathbf{v} , connected with volume shear. All three types of vibrations are satisfied in total approximation for the designated media in the plane wave equation

$$\frac{\partial^2 \psi}{\partial t^2} + \frac{1}{r} \frac{\partial^2 \psi}{\partial r^2} + k^2 \psi = 0, \quad (1)$$

where ψ is the potential $\mathbf{v} = \text{grad} \psi$ and the corresponding vector potential $\mathbf{v} = \text{grad} \psi \times \mathbf{e}_z$ (\mathbf{e}_z is the unit vector of the corresponding coordinate system). ω/c is the value of the wave vector during the propagation of elastic vibrations in the corresponding medium with the velocity c . k is the coefficient of absorption per unit of length, and r and θ are the polar coordinates.

USSR

GRITSYK, V. V. and MIKHAYLOVSKIY, V. N.

"Estimate of the Quality of Information Transmission"

Otsenka Kachestva Peredachi Informatsii [English Version Above], Kiev, Nauk. Dumka Press, 1973, 106 pp (Translated from Referativnyy Zhurnal Kibernetika, No 9, 1973, Abstract No 9V491).

Translation: This monograph contains results of the development of the basic problems related with the information evaluation of the effectiveness of methods of information transmission. The initial consideration in this work was that the basic task of the selection of a method of information transmission is to provide the maximum effectiveness (economy) with fixed accuracy and reliability of transmission.

The first chapter presents a brief critical review of the primary indicators for evaluation of the quality of methods and system of information transmission, in particular those used in subsequent chapters.

Chapter Two presents the necessary mathematical apparatus from the information theory of Shannon. Original results are presented concerning the determination of formulas for the mean quantity of information received per code word for binary correcting codes with various modes of their utilization. Certain asymptotic estimates of the mean quantity of information received per code word are given, when the reliability of information transmission

USSR

Gritsyk, V. V. and Mikhaylovskiy, V. N., Otsenka Kachestva Peredachi Informatsii, Kiev, Nauk. Dumka Press, 1973, 106 pp.

approaches unity. The concept of the expanded spectrum of a code is introduced and certain results are presented concerning the possibility of correction of errors by correcting codes.

Chapter Three studies an important class of correcting codes -- group (line) codes. New methods are presented for production of formulas for the mean quantity of information received per code word for group codes, which essentially simplify the general method of production of formulas. General expressions are produced (depending on the length of a code word n) for group codes with minimum distance $d = 2$, improved Hamming codes with $\min \omega(v_i) = 3$, quasi-improved Hamming codes with $\min \omega(v_i) = 4$.

Chapter Four presents a generalization of a number of results produced in the earlier chapters to nonbinary codes. A general method (algorithm) is presented for production of formulas for the mean quantity of information received per code word using computers. A general formula is produced for the mean quantity of information received per code word for known trinary Meshkovskiy codes. New data are presented concerning conversions as a result of which equivalent codes are produced in relationship to the information received. The lower boundary is concluded for the mean quantity of information received per code word, code power $N = m^k$, where m is the base (alphabet) of the letters: $k > 0$.

2/3